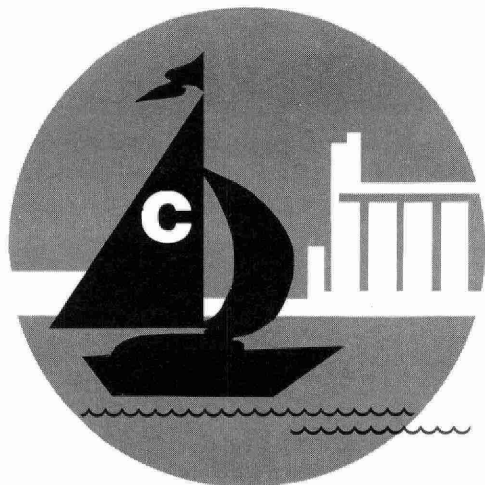


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COLLINGWOOD HARBOUR

REMEDIAL ACTION PLAN

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SOCIO-ECONOMIC PROFILE OF THE TOWN OF COLLINGWOOD

MARCH 1992

10/03/92

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ISBN 0-7729-9201-0

COLLINGWOOD HARBOUR REMEDIAL ACTION PLAN

SOCIO-ECONOMIC PROFILE
OF THE TOWN OF COLLINGWOOD

Report Prepared For:

Great Lakes Section
Water Resources Branch
Ontario Ministry of the Environment

Report Prepared By:

KEIR Consultants Inc.

MARCH 1992



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COLLINGWOOD HARBOUR
REMEDIAL ACTION PLAN
SOCIO-ECONOMIC PROFILE
OF THE TOWN OF COLLINGWOOD

Prepared For:

The Collingwood Harbour Rap

and

The Water Planning and Management Branch
Canada Centre For Inland Waters
Environment Canada

Prepared By:

Keir Consultants Inc.

DISCLAIMER

This report was prepared for the Water Planning and Management Branch, Canada Centre for Inland Waters, Environment Canada and for the Collingwood Harbour Remedial Action Plan as part of a COA (Canada/Ontario Agreement) funded project. The views and ideas expressed in this report are those of the authors and do not necessarily reflect the views and the policies of the agencies, nor does mention of trade names or commercial products constitute endorsement or recommendation for use.

FOREWORD

prepared by G. Krantzberg
Collingwood Harbour RAP Coordinator

Since designation of Collingwood Harbour as an Area of Concern in 1977, the Collingwood Harbour Remedial Action Plan (RAP) has been working towards ways of addressing and correcting the harbour's environmental problems. The fundamental goal of the Collingwood Harbour RAP continues to be the improvement and protection of the quality of Collingwood Harbour's ecosystem. In consultation with the community, the Public Advisory Committee (PAC) has identified goals and uses, and is finalizing the selection of preferred options for the harbour.

Environmental conditions that detract from those goals and uses are the primary concern of the RAP. While water quality has improved substantially over the past decade, several problems still remain. Chief among these is nuisance algal growth, caused by excessive levels of phosphorus and other nutrients in the water. Technical and nontechnical solutions are being combined to resolve the eutrophication of Collingwood Harbour.

The RAP process has provided opportunities for the community--business, industry, government, schools and individuals--to get involved and to act on their commitment to resolve the harbour's environmental problems. The RAP Team and the Public Advisory Committee (PAC) have been receiving the public input necessary to achieve consensus on actions that will improve and protect the harbour environment. Designed to assist in the socioeconomic evaluation of remedial options for Collingwood Harbour, this document has been prepared as part of that consensus-building process.

The environment, and the choices that are made to preserve and restore it, are community concerns. The harbour is of fundamental importance to the future of the Town of Collingwood. If the RAP is to be successful, it will require the effort, resources and dedication of the entire, well informed community.

EXECUTIVE SUMMARY

This profile is intended to provide an understanding of the diverse socio-economic factors that are influencing change within the Town of Collingwood and its harbour. It sets out a comprehensive profile of past, present and future area uses that have and will continue to shape the Collingwood economy and its population. These factors must be addressed in the determination of appropriate remedial options in order to maximize future beneficial economic and social benefits for the community.

Historic economic development and prosperity in Collingwood centred around its harbour. Transportation, ship building and industry provided a strong economic base for the town, but in the process they exacted a high price on the quality of water in the harbour. Past industrial, residential and commercial growth left a legacy of polluted water characterized by excessive phosphorus and contaminated silt.

The Town of Collingwood and the use of its harbour are now in a period of transition. The water based transportation and industry that were responsible for its establishment have given way to a service and recreation/tourism economy. The closing of the Collingwood Shipyards in 1986 was the most visible occurrence in what has been and continues to be a long industrial decline. In the past, industrial diversification of the 1960's mitigated the effects of lost traditional water related industries, but these too, with a few exceptions entered a period of decline in the 1980's.

Recreation and tourism in the Collingwood area have been evident since the late 1800's. Georgian Bay and local ski resorts have long attracted sportsmen and tourists, but recent investments in the recreational housing market have stimulated recreational and tourism activities by orders of magnitude. Increased disposable income, more frequent vacations, aging populations and fitness awareness have created a recreational residential boom in Collingwood that transformed the community's image from ship building to condominiums.

These changes in the town's character have lead to a transition in harbour uses. The industrial uses of transportation and ship building are now being replaced by recreational residences, pleasure boating, fishing and passive recreational pursuits.

Renovations to the sewage treatment plant combined with pretreatment and recycling by local industry and resident conservation have resulted in improved water quality in recent years. Notwithstanding these initiatives, present and emerging uses could be adversely affected by the presence of algal blooms, poor water clarity and occasional bacterial discharges if water quality enrichment continues.

Collingwood has become a four season resort community. Its industrial base is likely to continue in decline. The future economic prosperity of the town appears to be dependant on natural resources and its ability to attract tourists and a growing population. Integral to this future growth is Collingwood Harbour. Existing harbour developments and the proposed Shipyards mixed use waterfront development will be instrumental in creating an entirely new active waterfront.

The restoration of water quality is essential to the increased recreational use of Collingwood Harbour and the economic benefits that will be brought to the community. Although an emerging recreational area, Collingwood remains a multi-use community that will require a balance to be struck between the remaining industrial establishments and emerging recreational uses to ensure the greatest economic and social benefits.

Increased development will bring increased pressure on treatment facilities. It is therefore necessary that a comprehensive approach to industrial, commercial and residential waste management, including an apportionment of the burden of costs be undertaken. Improved water quality will spur additional waterfront development and benefits to the town and tourists alike. As such, selected remedial actions should maximize benefits to the greatest number of people. At the same time, there must be an equitable distribution of costs, so that those parties who benefit most will also contribute in a significant manner to the funding of these initiatives.

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1.0 INTRODUCTION

This document has been prepared in order to foster an understanding of the relationship between the growth of the Town of Collingwood and the harbour upon whose shores it developed. Since the demise of the Aboriginal inhabitants and the arrival of European settlers, the harbour and its associated activities have stimulated the prosperity, diversification and changing character of the town. Unfortunately, the growth of the town that was attributable to the harbour and its opportunities, has in turn damaged the quality and usability of that very same water body.

The prosperous past use of the harbour as an industrial and ship building centre has now ceased, but these activities have left behind localized zones of polluted waters and contaminated silt. Past growth is now hampering future potential.

1.1 Background

Collingwood Harbour was designated as an Area of Concern in 1977, and as a result, Environment Ontario and Environment Canada developed the Collingwood Harbour Remedial Action Plan (RAP). The focus of this plan is to correct the circumstances that are giving rise to the harbour's environmental problems. The fundamental goal of the Collingwood RAP is the improvement and protection of the quality of harbour waters.

While water quality in the harbour has improved substantially over the past decade, several environmental problems still remain. The RAP process has provided opportunities for the community, business, industry, government, schools and individuals to get involved and to act on their commitment to resolve these problems.

A Public Advisory Committee (PAC) was established in 1988 and included representatives from local business and industry, municipal agencies, waterfront landowners, educators, environmental organizations, labour, tourism agencies and recreational fishing and boating groups. This, PAC was designed to reflect the concerns of those in the Collingwood community who have an interest in, or who are most directly affected by, water quality in

the harbour. In consultation with the broad community, the PAC identified the following goals and uses for the harbour:

Goals

- The water quality of the harbour should be such that the flow into Nottawasaga Bay should not adversely change the bay or affect the town's drinking water.
- The harbour water should be aesthetically pleasing so it can be used for passive recreation.
- Use of the harbour should ensure that fish and wildlife levels within the harbour area are sustained.
- Designated swimming areas should not be a goal within the harbour due to safety concerns as a result of heavy boat traffic, but water quality should meet provincial bacteriological guidelines for body contact recreation with the exception of limited periods following storms.

Uses

Commercial/ Industrial

- continued disposal of sewage treatment plant effluent
- maintain existing shipping, berthage and grain handling
- charters
- sightseeing
- normal marine traffic and business at grain terminal

Recreational

- boating
- sport fishing and ice fishing
- nature observation
- public marina (full service)

1.2 Collingwood Harbour

Collingwood Harbour is situated in Georgian Bay on the south shore of Nottawasaga Bay (refer to Map 1-1). It is relatively shallow with a maximum depth of 6.4 metres in the dredged portion of the 244 metre long turning basin. The harbour is approximately 0.8 km^2 in area and has an approximate volume of $28.7 \times 10^{-4} \text{ km}^3$.

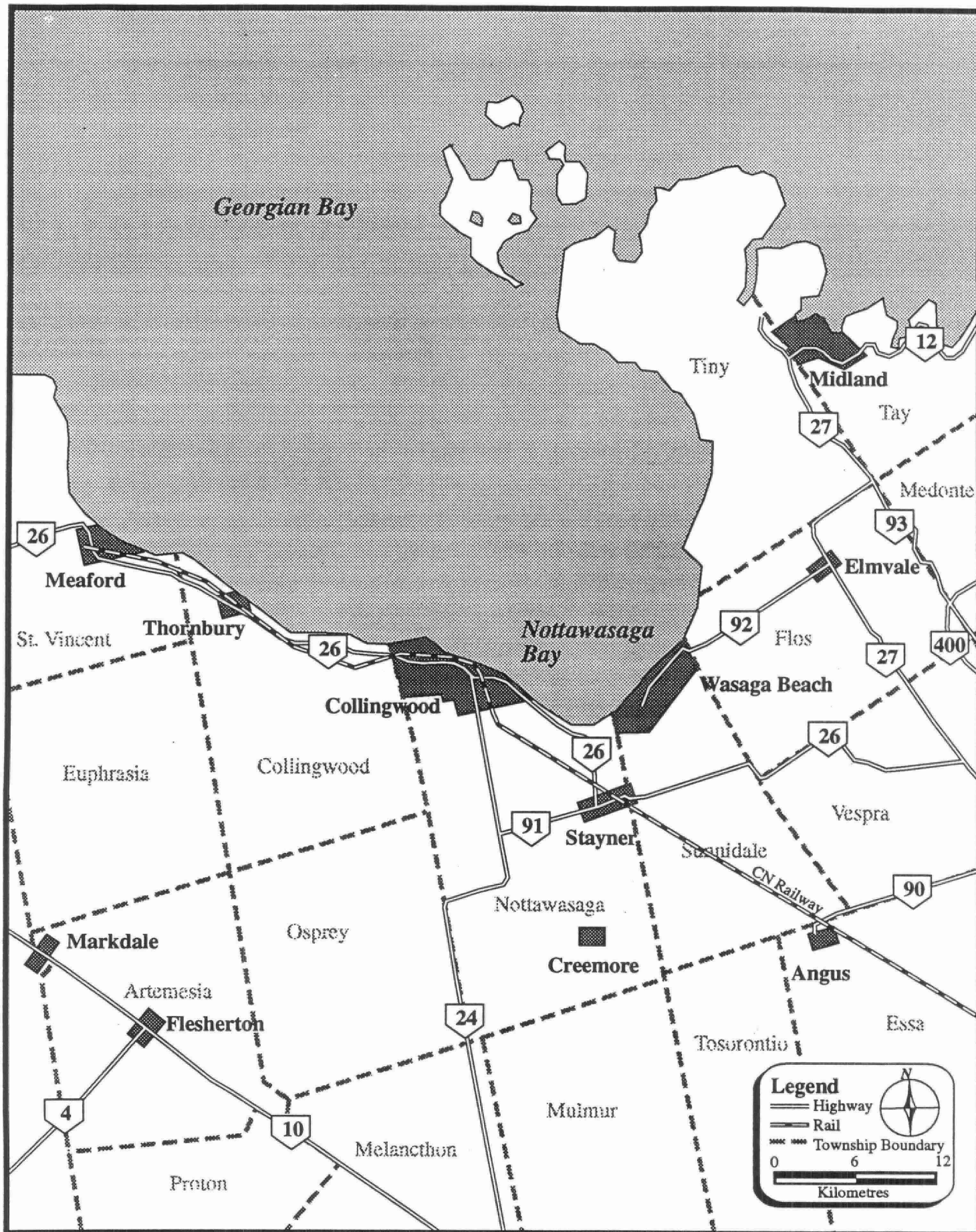
The watershed that empties into the harbour encompasses two physiographic regions : the Niagara Escarpment region in the upper part of the basin and the Simcoe Lowlands region in the lower section. (refer to Map 1-2). The latter ends in a sand plain of beaches at the Nottawasaga Bay shoreline.

Collingwood Harbour supports a wide variety of wildlife species and aquatic vegetation. Yellow perch and smallmouth bass are abundant in the harbour. Rainbow trout, lake trout and walleye migrate into the harbour from the open waters of Georgian Bay during the spring and fall. The harbour also contains significant wetland areas along its western edge, including fens, swamps and marshes which support many species of birds, reptiles, amphibians and insects.

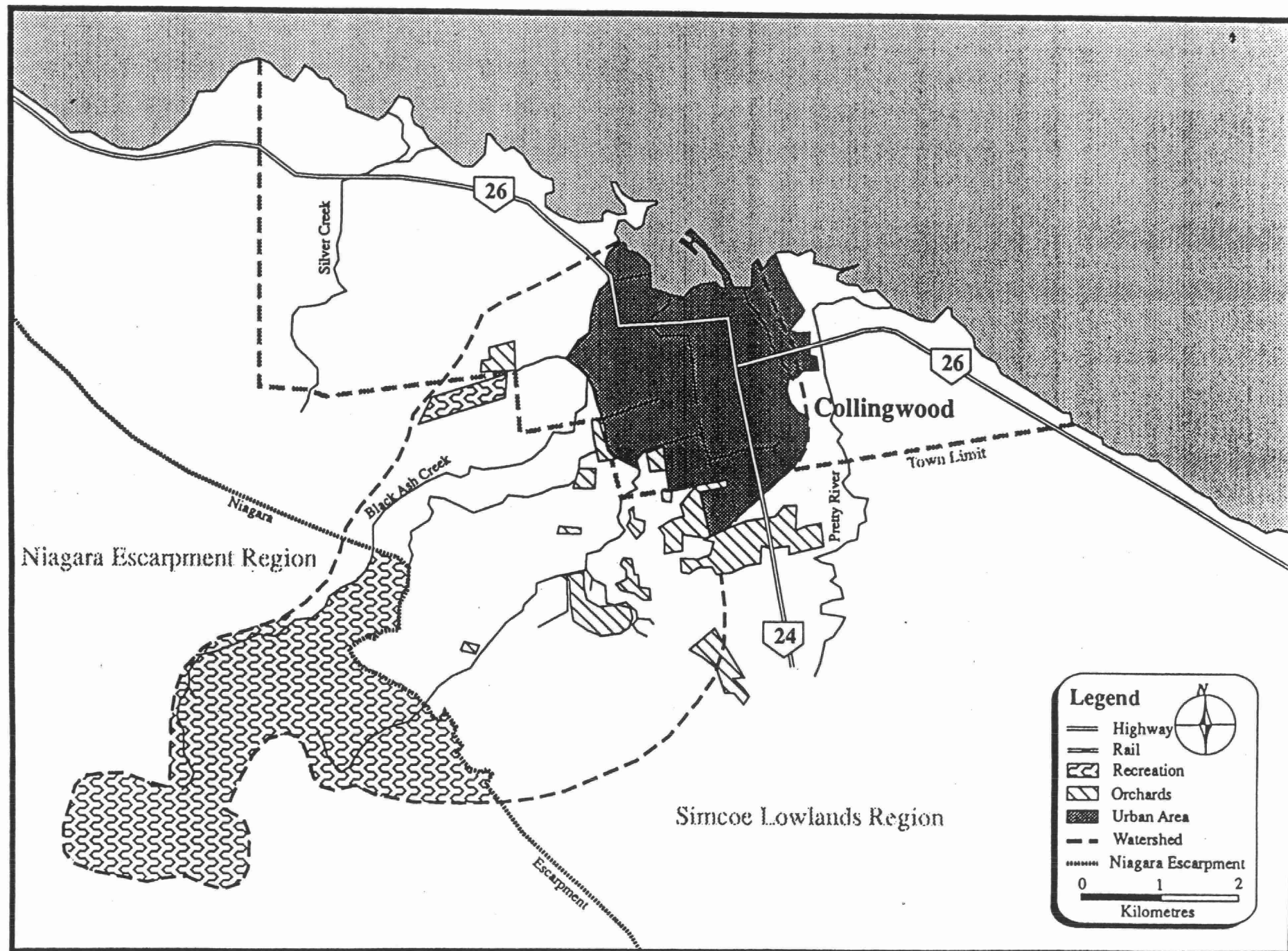
Due to the shape and orientation of Collingwood Harbour, there is limited exchange with Nottawasaga Bay. The exchange rate of water is affected by both natural and man-made influences. Wind-generated currents and stream flows are the principal determinants of exchange rate, but breakwaters, piers and dredged channels affect the speed and direction of the currents. Mixing within the harbour governs sediment resuspension and thus affects the quality of the harbour waters.

Collingwood Harbour receives tributary drainage from three small creeks. Black Ash Creek, the largest of the three, originates in the vicinity of Osler Bluffs and drains the surrounding agricultural area. The other two creeks, locally known as Oak Street Canal and Hickory Street Canal flow intermittently. Municipal storm sewers drain to these creeks, rather than directly to the harbour.

Map 1-1: Regional Setting



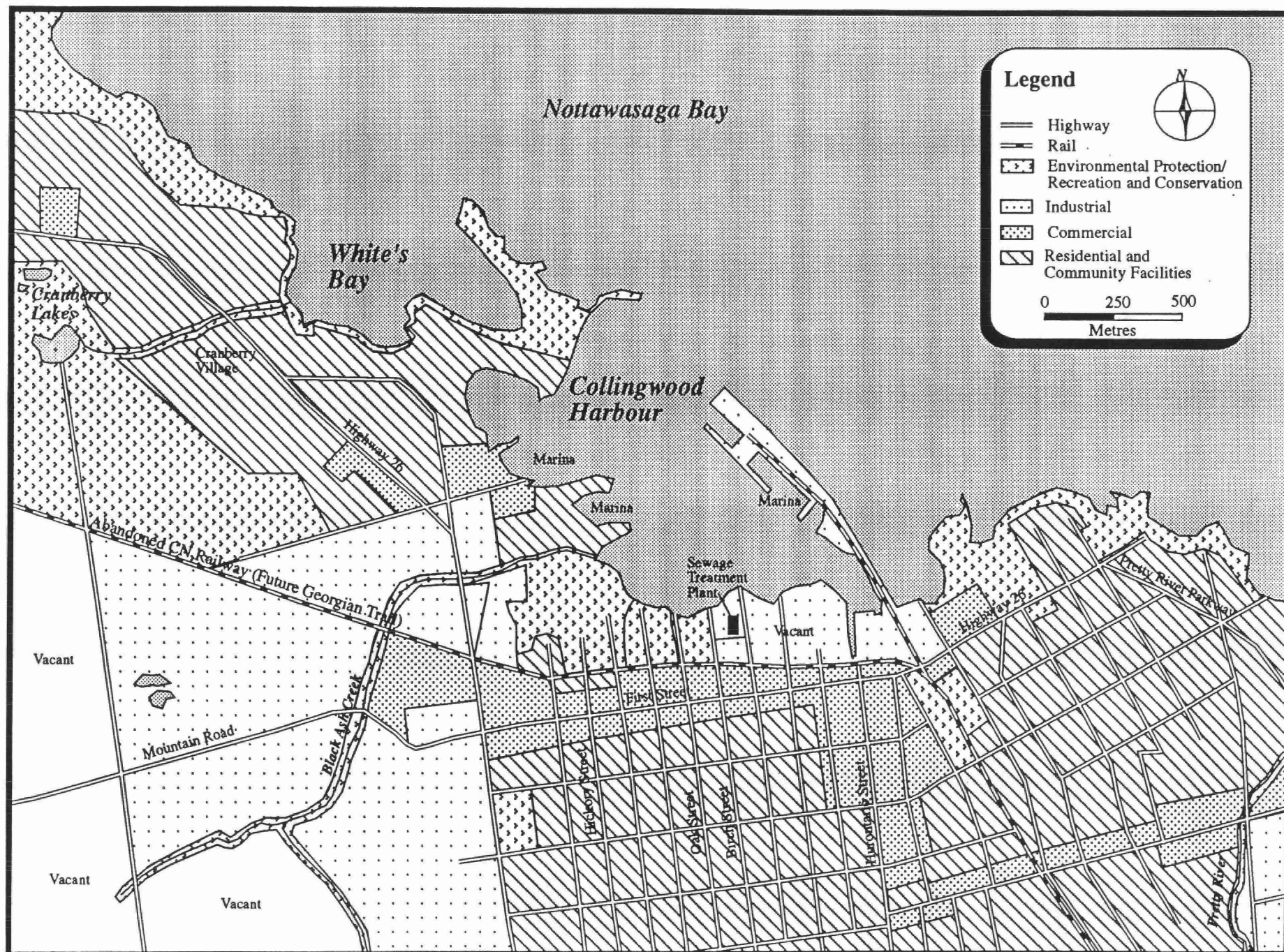
Map 1-2: The Collingwood Harbour Watershed



At present Collingwood Harbour is used for commercial shipping, recreational boating and fishing as well as a receiving water body for discharge from the local sewage treatment plant.

As shown in Map 1-2 and 1-3 the area surrounding the harbour is a multi-use basin incorporating urban, agricultural, industrial and recreational land uses. The shoreline of the harbour is fringed by the Town of Collingwood, and its associated residential, commercial and industrial activities. The mid and upper sections of the watershed are primarily characterized by farming and recreational uses.

Map 1-3: Existing Land Uses



2.0 CURRENT WATER QUALITY CONCERNS

2.1 Current Concerns and Causes

Since 1977 when Collingwood Harbour was designated as an area of concern, water quality has generally improved for two principal reasons. One, because of reduced industrial use of the harbour and two, because of significant improvements in the efficiency of Collingwood' sewage treatment plant. However, notwithstanding these improvements, several problems still remain.

Nuisance Algal Growth

Collingwood Harbour was first identified as an "area of concern" due to nuisance algal growth, and the problem still persists. Excessive algal growth adversely constrains boating and swimming and is aesthetically displeasing. The primary cause of nuisance algae (ie. algal blooms) is the presence of nutrients, particularly phosphorus. Even though phosphorus levels have decreased in the past decade, algal blooms may still occur during limited periods in the summer. Due to elevated phosphorus levels, the Provincial Water Quality Objective of 20 ug/L can be exceeded for periods of days or weeks.

The sources of phosphorus to the harbour have been identified and include the sewage treatment plant, watershed runoff, atmospheric inputs, and sediment release. The primary direct source of phosphorus has been and continues to be the municipal sewage treatment plant, although recent operational changes have been responsible for a decline in their discharge of phosphorus. Also, through the cooperation of local industry, the proportion of the phosphorus sent to the sewage treatment plant from industrial sources has declined due to recycling and pre-treatment. Currently, phosphorus levels in the sewage treatment plant effluent meet the Provincial Water Quality Objective.

Black Ash Creek and the canals also contribute approximately 9 per cent of the phosphorus loads. Algal blooms occur at the outfalls of Black Ash Creek because of the high levels of phosphorus in the runoff; this may be attributable to the fact that the creek drains agricultural areas. Fertilizers with phosphorus content used on agricultural commercial and residential properties, may be contaminating the harbour through the creek as a result of

surface runoff. Sources and amounts of phosphorus loading into the harbour have been estimated as contained in Table 2-1.

Table 2-1
Estimated Phosphorous Loadings to Collingwood Harbour

Source	Loading (kg. / year)
Atmospheric Deposition	45
Sediment Release	50
Sewage Treatment Plant	4000
Urban Stormwater	500
Watershed Drainage	500
Total	5095

Source: Collingwood Harbour RAP, Stage I, Environmental Concerns and Problem Definition, as updated.

Bacteria

Bacterial levels in the harbour are generally low. With recent improvements at the sewage treatment plant, bacteria in the harbour waters have declined. However, at several test sites within the harbour from 1974 to 1986, bacterial levels exceeded the Provincial Water Quality Guidelines for swimming and bathing (100 counts of faecal coliform bacteria per 100 mL). No such violations were recorded in 1989 or 1990. It is probable that bacterial levels are temporarily elevated during storm events due to increased runoff and peak overflows of untreated effluent from the sewage treatment plant.

There are two sources of bacteria to the harbour: the sewage treatment plant, and runoff from Black Ash Creek, Oak Street Canal, and Hickory Street Canal. Further study is required to determine the length of time that bacterial levels are elevated following a storm. Bacterial levels during dry periods are not of concern.

Sediment

In the 1980s, sediments were found to have high levels of PCBs, zinc, lead and other metals, phosphorus and Kjeldahl nitrogen that exceeded provincial guidelines for open water disposal of dredged material. If the harbour is to be maintained as a centre for commercial shipping, it must be dredged periodically; hence, the quality of the sediments is important. If the sediments meet the provincial guidelines, they can be disposed of in open water and do not have to be placed in confined storage, thereby reducing dredging costs.

Recent research indicates that sediment quality is improving. Currently there are only a few areas that marginally exceed the open water disposal guidelines.

Numerous studies conducted on fish and invertebrates in 1986, 1988 and 1989 found no toxicity associated with the sediment. Therefore, exceeding the guidelines does not necessarily imply a toxicity problem. Local conditions can cause contaminants to stay bound up by sediment and make them unavailable for uptake by fish and invertebrates.

A sediment bioassessment study conducted in 1986 to determine whether contaminants in sediments impaired potential beneficial uses indicated that the sediments were non-toxic to fathead minnows and mayflies however, bioassay organisms accumulated significant levels of lead at several stations. This bioaccumulation was no longer observed during 1989 testing of resident biota. Several organochlorine compounds, in particular PCBs and DDE, were also retained by the test species. However, the levels were low and unlikely to affect benthic organisms or to contribute to elevated levels in higher trophic levels of the food chain. Mussels suspended above the harbour sediments did not accumulate metals or PCBs and tissue concentrations of these compounds in 1990 were low in young-of-the-year spottail shiners. This evidence suggests that the harbour sediment does not impair potential beneficial uses. An advisory on human consumption of yellow perch greater than 35 cm (14 in) due to mercury contamination is in effect. This advisory is similar to restrictions in other areas of Georgian Bay and has not been attributed to local sources of mercury. Catches by local anglers were analyzed for mercury consumption advisories in 1990.

The localized contamination of harbour sediment is attributed mainly to historic use of the harbour as a centre for the repair and construction of Great Lakes vessels. These activities have ceased and do not continue to contribute to sediment contamination. Dredging carried out in 1986 has removed a considerable portion of the contaminated sediment from the harbour.

Water Clarity

The harbour's water clarity has generally been poor and reflects a condition that is typical of harbours throughout the Great Lakes. Testing in 1986 indicated that water clarity in

most areas of the harbour did not satisfy Provincial Water Quality Objectives for safe swimming.

The turbidity of the water may be attributable partly to algal growth and partly to suspended inorganic matter. Furthermore, water clarity depends to a large extent on rates of flushing, and the flow of water within, into and out of the harbour. In 1990, water clarity improved, likely as a result of improved removal of phosphorus at the sewage treatment plant and the consequent reduction in algal growth.

2.2 Goals and Objectives

The Province of Ontario has agreed that the revised Specific Water Quality Objectives contained in the Great Lakes Water Quality Agreement shall be used in environmental programs to achieve and maintain Great Lakes water quality. The specific goal and policies of remedial programs as detailed in the Stage 1 Rap report for Collingwood Harbour (Environment Ontario and Environment Canada, 1989) are outlined below.

Goal:

To ensure that the surface waters of the province are of a quality which is satisfactory for aquatic life and recreation.

Water quality which meets criteria for aquatic life and recreation (designated as the Provincial Water Quality Objectives), will be suitable for most other beneficial uses, such as drinking water and agriculture. For the few parameters where better water quality is required to protect these other beneficial uses in a given location, the appropriate criteria shall be applied for that location.

Policies:

Areas with water quality better than the objectives

In areas which have water quality better than the Provincial Water Quality Objectives, water quality shall be maintained at or above the objectives.

Areas with water quality meeting the objectives

Water quality which presently does not meet the Provincial Water Quality Objectives shall not be degraded further and all practical measures shall be taken to upgrade the water quality to the objectives.

An objective of public consultations is to identify the more "sensitive uses". These may require improvements in water quality to meet the identified use goals.

2.3 Remedial Options

In order to aid the achievement of the Collingwood Harbour Remedial Action Plan's fundamental goal of the improvement and protection of the quality of Collingwood Harbour's waters, the RAP team in conjunction with the PAC, identified twenty-nine potential remedial options in the form of a discussion paper. These options were established through an ecosystem approach that recognizes water, air, animal, plant and human life, while emphasizing the importance of their interaction.

The options can be separated into "Technical" and "Non-Technical" streams. The technical options involve physical improvements or preservation to sewage plants, sewage treatment, natural water courses and amenities, while the non-technical options concern themselves with public education and encouraging changes in behaviour. The various options as set out in the document "Making Choices: Discussion Paper on Remedial Options" are as follows:

2.3.1 Technical Options

Options Involving the Sewage Treatment Plant

- 1 Construct a new sewage treatment plant at the town's industrial park for treatment of industrial effluent.
- 2 Construct a sewage detention pond to detain water in the event of upsets or excess flows. Effluent would be treated once the plant is capable of handling the flow as opposed to being released straight into the harbour.
- 3 Install tertiary treatment at the sewage treatment plant to further improve the quality of released effluent.
- 4 Move the sewage treatment plant out of the harbour to a location that would foster greater dispersal and dilution of treated effluent.
- 5 Computerize controls at the existing sewage treatment plant for better efficiency and cost reduction.

- 6 Develop or apply new innovative technology to the sewage treatment plant, such as solar aquatics.
- 7 Extend the outfall pipe to more rapidly dilute discharged effluent and speed up the rate at which nutrients leave the harbour.

Options Involving Controls Up The Pipe

- 8 Develop new technology for industry in order to eliminate or reduce phosphorus loadings. This could include man-made marches, man-made rock marches and solar aquatics.
- 9 Pre-treat industrial effluent at the source to reduce nutrient loadings.

Options Involving the Harbour Itself

- 10 Preserve wetlands by preventing their destruction or development.
- 11 Rehabilitate areas of the harbour to provide and enhance fish and wildlife habitat.
- 12 Construct a Black Ash Creek detention pond to reduce nutrient and silt loading to the harbour.
- 13 Establish and create vegetative buffer zones along Black Ash Creek and the canals to enhance retention of runoff and reduce loadings.
- 14 Under the Federally funded Cleanup Fund, propose Collingwood Harbour as a demonstration site for new methods of contaminated silt removal and storage.
- 15 Increase exchange of harbour and Nottawasaga Bay waters by opening the east and west sides of the harbour.
- 16 Monitor the harbour water and silt quality over time to determine whether the harbour quality will improve or if remedial options are required.

2.3.2 Non-technical Options

Options Involving Public Education

- 17 Construct an environmental theme adventure playground in Harbourview Park in order to educate children and parents about their lifestyle and its effects on the environment. This option is already being carried out.
- 18 Launch a multi-media communications blitz to make the public aware of RAP progress and encourage involvement.

- 19 Establish an environmental resource centre to provide information about the harbour environment.
- 20 Distribute a RAP teaching package to students and teachers in order to foster a better understanding of harbour environmental issues.
- 21 Install a RAP bulletin board at a prominent harbour location to educate harbour users to RAP progress and harbour issues.
- 22 Implement a mariner education program through printed media to be available at launches and marinas to educate boaters with regards to reducing harbour pollution.
- 23 Implement an ice fisherman education program to educate ice fisherman to ways of reducing harbour pollution.

Options involving Changes in Behaviour

- 24 Prohibit or discourage the use of detergents containing high levels of phosphorus and eliminate the use of persistent pesticides.
- 25 Discourage or restrict the use of phosphorus fertilizers for residences and golf courses.
- 26 Apply Agriculture and Food, land stewardship principles of conservation tillage to reduce soil erosion along the Black Ash Creek watershed.
- 27 Encourage reductions in water consumption to reduce waste water volumes. The town's water metering program has already realized significant reductions in water consumption.
- 28 Utilize composting or water conserving toilets in order to reduce loadings. The town's conservation program involves the installation of toilet dams to reduce the amount of water used.
- 29 Control grey water discharge from boats in the harbour in order to reduce phosphorus and bacterial additions to the harbour.

2.4 Local Perceptions

Local residents have become increasingly aware and concerned about the harbour and its waterfront. For years the harbour was a place of business and substantial portions of the surrounding waterfront were undeveloped. It was not until the business uses ceased and the development of residential condominium projects began that the general public came to

realize that they would soon lose access to one of their community's most valuable resources if they did not get directly involved in the planning and redevelopment process.

This awakened interest lead to a By-law amendment that reduced the maximum permissible height of buildings on the waterfront and within the town. Through discussions lead by the RAP team, the following community's aspirations were also identified:

- No further water quality deterioration should be allowed.
- Water quality should be improved.
- An action plan detailing the clean-up should be prepared.
- Industry is a mainstay of Collingwood and the RAP must take industry's contribution to the town into account.
- The RAP should work to get Collingwood Harbour off the Area of Concern list.

In recent surveys conducted for a paper assessing the impacts on tourism and leisure on the Town of Collingwood (Wilkinson and Murray, 1990), business and community leaders identified the significant cause and effect relationships shaping the community. Retail and service businesses felt that their current prosperity was attributable to tourism and recreation which was in turn changing with the town's demographic, lifestyle and expenditure patterns.

Business people and residents alike suggested Collingwood has become a four season resort based community. They are keenly aware of the strong linkages between recreation, economic health and environmental quality.

The "downside" of the community transformation is a strain being placed on services, a shortage of affordable housing, the loss of a less hurried way of life and new materialistic values. Respondents indicated that the biggest problems facing Collingwood at the moment are uncontrolled growth, particularly condominiums, waterfront development, rising housing costs and a general decline in environmental quality. Employment concerns were also voiced in light of declining industrial jobs and an unbalanced orientation among local manufacturers towards the auto industry, which is in a severe down turn at the present time.

3.0 SOCIO-ECONOMIC HISTORY

3.1 Prehistory

The lake bed of the pre-glacial Lake Algonquin provides an appropriate setting for the Town of Collingwood. Its roots are in the water. Like many other pioneering towns in Upper Canada, the Town of Collingwood grew up as a strategic transportation and commerce centre due to its location on a water body.

Land now occupied by the Town of Collingwood, was at one time a dense forest and inhabited by the Tionnonate Tribe of Indians in the 17th century. In 1833 Nottawasaga Township, then known only as "Blue Mountain Country", was first laid out and the door was opened for white settlers. The natural harbour provided a secure location for the establishment of a mill pond at the north end of what is now Raglan Street. Hurontario Mills located at Hen and Chicken Harbour formed the nucleus for the development of the town. A steam saw and grist mill was established in 1853 at Underwood's Creek and Great Lakes navigation to the area commenced in 1855.

Further development was spurred on by the establishment of the railway terminus for the Northern Railway in 1855. The town enjoyed, as it still does today, the receipt of growth and investment due to its lake front location and proximity to the major markets and urban areas of Upper Canada. The area quickly became the rail head of Ontario and served as the port of departure for all points west. In 1857, regular steam ship routes enjoined the community to the west and as a result of the development that followed Collingwood was incorporated on January 1, 1858. The community was named after Admiral Lord Cuthbert Collingwood, the second in command at the battle of Trafalgar.

Already an important transportation node, Collingwood also realized the development of shipbuilding and industrial enterprises. The dawn of ship building and the "keel" of Collingwood was laid in 1882 when a town debenture enabled the construction of the original dry dock and building works known first as the Queen's Dry dock and Ship Building Company, but later to become the Collingwood Shipyards . Boasted as the finest

and largest dry dock in the fresh waters of Canada, the facility was of masonry construction and measured 325 feet by 60 feet and extended 14 feet below the low water mark in depth.

The transport of goods from the west gave rise to storage facilities for grain and corn as early as 1862. The Collingwood Terminals elevators were developed in 1928 and received western grain for storage pending transfer to rail cars for distribution to central Canada.

Freight transport and industry were major factors in the growth of Collingwood, but they did not provide the only impetus. Passenger service by rail and water and the use of the area's natural amenities as a playground by the affluent of southern Ontario also had a role. In a like manner to the transport of goods to western Canada and the United States, Collingwood became a significant port for passenger service from Upper Canada to the U.S. and became the major link to ports such as Sault Saint Marie, the boom town of Chicago and points in between. These routes became popular for industry, commerce and pleasure excursions. The frequency of passenger service brought about the development of a significant passenger rail station and a fleet of supporting hotels which were quite opulent in their time for a such small town. Development and commercial activity was so great in Collingwood at one time that it was dubbed "Chicago of the North".

As Collingwood continued to grow in the late 1890's and early 1900's its infrastructure took shape. Water works were constructed in 1889 and public utilities continued to grow with the formation of the Water and Light Commission in 1908, later to become the Public Utilities Commission.

With a population in 1871 of 2,800, Collingwood grew almost steadily in size and stature well into the next century. Although there were economic ups and downs as its industrial and transportation roots left it susceptible to the booms and the busts of external economic cycles, the town was economically dominated by its harbour for over a century. The lumber trade, grain storage and ship building were the key engines behind its growth.

3.2 Industrial Era

Over time the Queen's Dry Dock and Ship Building Company (The Collingwood Shipyards) evolved to become the mainstay of the community economy. As new modes of transportation evolved with the advent of road, new direct rail and increased shipping on and through the Great Lakes, Collingwood faded as a transportation centre and became a town centred around ship building.

The great depression, two World Wars and ensuing economic swings lead to a decline in fortunes of the Collingwood Shipyards and in the growth of the town. By the 1960's, the dangers of a one industry focus were recognized and in a pro-active flourish, similar to the establishment of the original dry docks, the town, aided by provincial incentives secured lands and created an industrial park in order to diversify its industrial base. This initiative was very successful at first, as eight new industries, among them, Canadian Mist, Nacan Products, LOF Glass and Goodall Rubber located in the community between 1966 and 1970.

New industrial investment dried up in the 1970's and there were no more company relocations. Those firms already present however, provided steady employment and continued to exhibit growth over the decade.

Economic fortunes again changed in the 1980's. The shipbuilding industry faced compounding problems. The industry in general was in a period of decline and no new shipbuilding contracts were available. Moreover Collingwood was now off the established shipping lanes on the Great Lakes and consequently was poorly located to capture repair work. As a result of these circumstances the shipyards were forced to close in 1986 with the resultant loss of 400 jobs.

The shipyards war time operation employed 2,000 people at the peak of production. Post war operations were scaled down, but still employed 1,200 individuals. The shipyards employed a further reduced work force of 600 people at the time its closure was announced. This number was well below the war and post war levels, but the loss still represented 25 per cent of the town's manufacturing employment (Wilkinson & Murray, 1990). Although the negative effects of the Shipyards closing were partially

alleviated by the establishment of Lemmerz-Magna (now Reynolds-Lemmerz) in the same year, this firm like several others in town is a supplier to the automotive industry and subject to cyclical growth and decline directly related to economic swings in the industry. The fortunes of Magna International have caused them to withdraw from their Collingwood partnership and Bendix Restraints, a seat belt manufacturer has ceased operations. Industry in general has been on the decline for some time in Collingwood and it has become evident that the influence of the community's industrial base will continue to give way to the ever increasing strength of recreation and tourism industries.

3.3 Recreation and Leisure

The recreation and leisure attributes of the Collingwood area were appreciated by the affluent residents of central Ontario in the late 1800's and they blossomed in the 1930's with the development of local ski hills. Since then the continued development of ski hills and the discovery of water based recreation opportunities has given steady rise to a progression of ski clubs and four season resorts. A wealth of natural resources and an affluent population of over five million within 250 km with a strong craving for leisure activities has enabled Collingwood to maintain a healthy economic position and should ensure it a prosperous future.

Like the town itself, recreation and leisure growth in the Collingwood area has historically experienced slow but steady gains in the past century. Georgian Bay has long been utilized for water based recreation and the single ski club of the 1930's has evolved into five full scale facilities. Other recreational development consisted primarily of private seasonal cottages and chalets up until the 1970's when Cranberry Village pioneered the local recreational resort concept of condominiums, hotel, marina, golf course and other leisure activities.

Recent years have given rise to dual income families, increased disposable income, physical fitness awareness, more numerous vacations, early retirement, an aging population and increased pressures for quality time. All these factors have once again made Collingwood a desirable location due to its natural amenities and recreational facilities. The demand for recreation and tourism in the Collingwood area has resulted in the construction of over 700 tourist accommodation rooms, 1,200 recreational condominiums, 600 marina

slips, 6 golf courses and numerous tourist attractions, most of which have been constructed within the past ten to fifteen years (Dillon, 1990). The recreational and tourist market now plays an important role in the local economy and will continue to do so, as the town benefits from the employment, investment, additional services and tourist dollars associated with these projects.

4.0 POPULATION EMPLOYMENT AND INVESTMENT

The economic base of Collingwood has evolved from a dependency on water based industries through general manufacturing to recreation and tourism. During this evolution, the economy has also experienced significant economic oscillations attributable to the growth and decline of historic water uses, manufacturing and more recently the boom and slow down in recreational housing.

4.1 Population

Collingwood had a permanent population of approximately 12,200 in 1988. It has not exhibited significant population growth in recent years. Between 1981 and 1988, the population increased by only 132 people or 1.0 per cent. This is in contrast to the forecasts found in the town's Official Plan which projected the population to increase by 8.0 per cent over that same period. Table 4-1 traces the growth of Collingwood from 1871 and illustrates a slow steady increase, with occasional periods of accelerated growth and decline. The table also illustrates that since 1941, the town's share of the County population has been steadily eroding. While Collingwood's population has slowed, those of surrounding Simcoe county have increased.

**Table 4-1
Town of Collingwood
Historic Population Growth**

Year	Town Population	Town Population as a Percentage of Total Population in Simcoe County
1871	2,829	5.0 %
1951	7,413	7.9 %
1961	8,134	6.4 %
1965	8,424	6.2 %
1969	9,165	6.2 %
1975	10,587	5.2 %
1981	12,064	5.7 %
1988	12,196	5.0 %

Source: Town of Collingwood, Official Plan

The mid 1960's was a period of industrial expansion and diversification. The town posted growth figures of 32 per cent between 1969 and 1981. Prior to industrial diversification, growth between 1961 and 1969 amounted to only 13 per cent. These figures attest to the important role industrial employment played in Collingwood's economic well being. Industrial employment levelled off in the 1970's and has been in a state of decline since. As a result of these economic conditions population growth also levelled off.

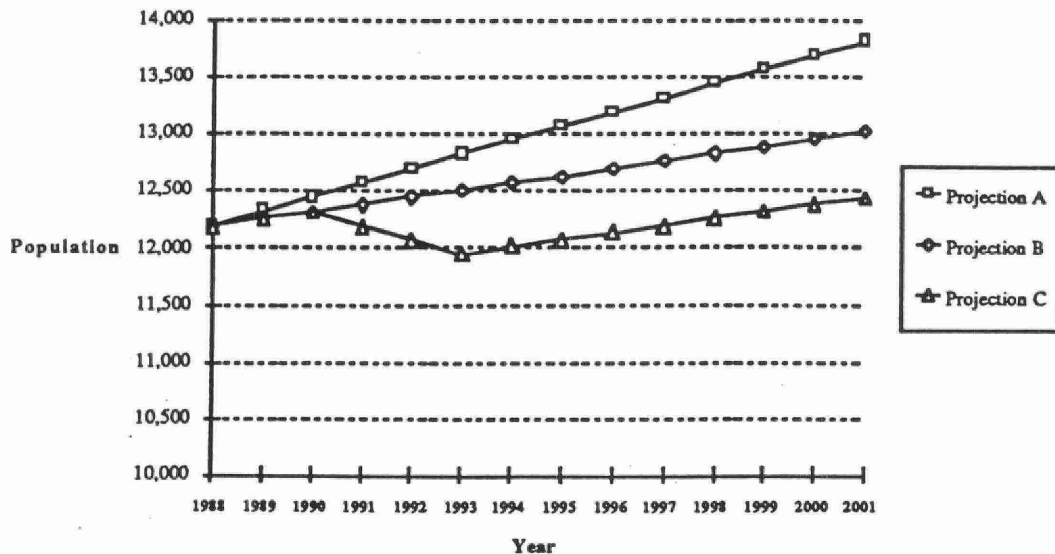
Although the 1980's brought a large amount of recreational development to Collingwood, there has been little permanent population growth as the purchasers of these properties are mainly seasonal residents and the majority of associated construction workers are transient. Due to the fact that much of the development takes the form of self contained resorts of a seasonal nature, there has been little pressure to expand town facilities that would create new permanent employment opportunities (Sheffer, 1991).

4.1.1 Population Projections

Past population projections for the town have not materialized. The Collingwood Official Plan had projected a 1988 population of approximately 13,000, when in fact the population numbered approximately 12,200. Declining industrial employment and lack of new permanent long term employment opportunities have been major contributors to this under achievement.

Current population forecasts to the turn of the century as supplied by the Town of Collingwood Planning Department (Figure 4-1), project several scenarios. Projection "A" is based on historic average growth rates since 1951 and translates to a projected growth of 1.0 per cent per year. This is consistent with projections developed by the Ministry of Treasury and Economics for Simcoe County. Projection "C" takes into account the current economic situation and dropping employment opportunities. This projection predicts a drop in population in the short term, rebounding to a 2 per cent growth rate between 1988 and 2001. Projection "B" was prepared by MacLaren Engineering in conjunction the the town's Waste Management Master Plan and falls between the two town forecasts.

Figure 4-1
Town of Collingwood
Population Projections



Source: Town of Collingwood Planning Department, 1991

4.1.2 Age Profile

Collingwood's population is aging as depicted in Table 4-2. During the period between 1981 and 1986, there was a 4 per cent decline of persons in the 0-15 years of age and an increase of 12 per cent in the 65 and over age group. These figures suggest that a significant number of new residents to Collingwood are retirees who are either buying properties or converting their seasonal homes to permanent residences. In comparison to the Province of Ontario, Collingwood's 65+ age group is disproportionately high. This group represents 16 per cent of the total town population, which is 52 per cent higher than the provincial average (Dillon, 1990).

TABLE 4-2
Town of Collingwood
Population Age Distribution

Age Group	1981	1986	Absolute Change	Percentage Change
0-4	875	840	-35	-4.0%
5-14	1,800	1,730	-70	-3.8%
15-64	7,590	7,605	15	0.2%
65+	1,800	2,010	210	11.6%

Source: Georgian Triangle Economic Development Corporation, 1990.

4.1.3 Seasonal Population

In contrast to the permanent population, Collingwood's seasonal population is growing at a rapid rate and is forecast to almost triple over the next ten years. Should this projection hold true, the seasonal and permanent population will be of almost equal size.

There are currently 1,419 seasonal residences in Collingwood and an estimated 4,000 seasonal residents (Morgan, 1990). Since 1986, the seasonal population has risen by approximately 2,400 or 150 per cent. If all currently approved units are constructed, seasonal residences will total 4,300 units. Given current household sizes, this will result in a seasonal population of approximately 12,000 people.

An analysis of mailing addresses of residential property owners in the town reveals that 85.7 per cent of owners are area residents, while 14.3 per cent reside elsewhere. Of the latter contingent, 91 per cent are from the Toronto and the Golden Horseshoe area (Wilkinson-Murray, 1990). It is evident that the current economic climate will not result in the seasonal residential growth that has occurred over the past five years, but the trend to seasonal accommodation and the pursuit of recreational lifestyles will continue to be the main influence on population growth.

This growing seasonal population will continue to place demands on water and sewage services, but the sporadic use of seasonal dwellings will have a reduced effect on yearly water demand and sewage flows compared to permanently occupied dwellings. However, the strong use that is made of vacation properties on or around statutory holidays may cause temporary surges in water demand and sewage flows on certain dates throughout the year. This effect may give rise to temporary water shortages or sewage overflows if not appropriately addressed.

4.2 Employment

As suggested earlier, manufacturing is in a state of decline. The prosperous years of the 1960's, fostered by the Industrial Incentive Program, gave way to little new growth in the 1970's and this was followed by plant closures and reduced employment in the 1980's. This latter erosion has continued and at present shows no signs of reversal.

Although not overtly obvious, the seeds of industrial demise in Collingwood began in the 1960's when the Collingwood Shipyards, the town's major employer was experiencing difficulties and reducing its ranks. The general decline in industrial employment and fear of a Shipyards closure was able to be stemmed by the attraction of eight new manufacturing industries in the late 1960's through various incentives (refer to Table 4-3).

Table 4-3
Town of Collingwood
New Industrial Establishments
in the Late 1960's

Company	Date Established	Product
TRW Electronic Components Ltd.	April 1966	Electronic Parts
Daal Specialties (Bendix)	September 1966	Automotive Accessories
Goodyear Tire & Rubber Co.	January 1967	Commercial Hoses
Harding Carpets	February 1967	Carpet Turfing and Yarn
Barton Distilling Co.	August 1967	Spirits
Libbey-Owens-Ford Glass Co.	August 1968	Automotive Glass
Goodall Rubber Co.	August 1968	Rubber Belts and Hoses
National Starch & Chemical Co.	December 1968	Starches & Chemicals

Source: Reflections, A Historical Anthology of Collingwood.

It was in 1986 that the Collingwood ship building industry finally collapsed. After 103 years of operation, the Collingwood Shipyards were closed and 400 jobs were lost. At the time of closing the Shipyard's had an annual payroll of \$25 million and it paid approximately \$800,000 annually into the town coffers through taxes (Sheffer, 1991). The effects of the closure were hard felt, but could have been worse. The closure of the Shipyards was offset at the time by the introduction of the Lemmerz-Magna aluminium wheel plant with its 300 new jobs and an increasing number of construction opportunities as a result of the emerging recreational condominium boom. Unfortunately these two strong emergences of the 1980's have now also run into difficulties. Financial problems caused Magna to bow out of its partnership with Lemmerz in favour of Reynolds, the American aluminium giant and the recent real estate slump has caused a large decline in the local building trades.

Tables 4-4 and Figure 4-2 illustrate the trend in industrial employment of the major Collingwood industries from 1986 to February 1991. Virtually all of the town's major employers have suffered varying degrees of loss over the past five years and there have been two business fatalities,

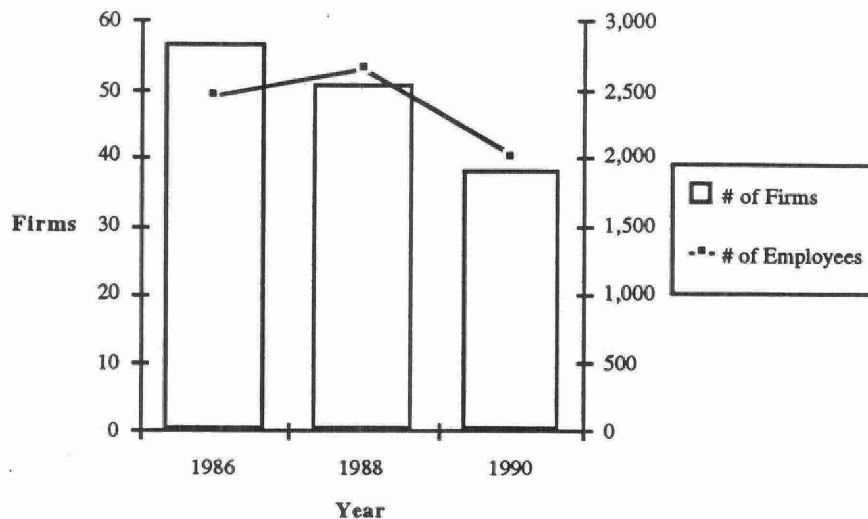
with the closing of the Shipyards and Daal's (Bendix).

Table 4-4
Town of Collingwood
Major Manufacturing Employers
and Number of Employees
1982-1991

Company	1982	1983	1984	1985	1986	1988	1989	1990	1991
Collingwood Shipyards	966	719	670	888	413	0	0	0	0
Daals (Bendix)	800	580	300	300	300	485	85	0	0
Goodyear	185	298	302	308	366	287	250	282	286
Harding Carpets	270	340	398	386	535	500	486	0	67
Kaufman Furniture	203	250	239	239	189	202	220	160	90
LOF Glass	261	442	493	495	542	635	674	685	685
Blue Mountain Pottery	135	130	111	111	0	17	1	20	10
Lemmerz Industries						330	360	360	300
Total	2,820	2,759	2,513	2,727	2,345	2,456	2,092	1,511	1,438
Cummulative Loss		61	307	93	475	346	728	1,309	1,382

Source: Georgian Triangle Economic Development Corporation, 1990.
Town of Collingwood Manufacturer's Directory, 1990.
Keir Consultants Interviews, February-March 1991.

Figure 4-2
Manufacturing Sector
Companies and Employment



Source: Georgian Triangle Economic Development Corporation

The 1988 work force was comprised of 7,100 people in manufacturing, service, tourism, construction and farming. Manufacturing establishments numbered 51 and total manufacturing employment stood at approximately 2,600 people. Tourism accounted for approximately 60 businesses with a work force of 900. The service sector was the predominant employer with 2,900 people employed in 350 businesses. Construction has gained in importance in the past few years and as of 1988 it had employed 560 persons in 41 firms. Farm related businesses accounted for 52 employees in 9 businesses. Growth in the tourism, construction and service sectors had been healthy from 1986 to 1988 with all sectors posting employment gains of over 80 per cent. By contrast, growth in the manufacturing sector has been almost stagnant. Small firms have accounted for increases, but their growth has been countered by falling employment roles among the larger firms. Table 4-5 illustrates the changing role that each employment sector is playing.

Table 4-5
Town of Collingwood
Employment Statistics by Sector
1986-1988

Sector	1986 Firms	1988 Firms	% Change	1986 Employees	1988 Employees	% Change
Manufacturing	57	51	-12%	2,466	2,658	8%
Service	324	347	7%	1,610	2,916	81%
Tourism	56	61	9%	403	919	128%
Construction	24	41	71%	251	560	123%
Agriculture	5	9	80%	17	52	206%

Source: Georgian Triangle Economic Development Corporation, 1990

It is important to note that the more up to date manufacturing data contained in Figure 4-2 on the previous page illustrates a considerable decline in that sector's number of establishments and employment from 1988 to present. The number of establishments has declined by 29 per cent and employment in the sector has declined by approximately 22 per cent. The current economic climate is further aggravating the situation as Kaufman Furniture has recently laid off approximately 70 workers and the automotive suppliers are pessimistic about their employment levels due to the slump in the auto industry. Of the industries surveyed, several are forecasting further employee lay offs. There are currently no new major industries or other businesses planning to locate in Collingwood. There have however, been inquiries from several small firms employing 20-100 persons. These firms are involved with recycling and the manufacture of environmentally friendly products (Sheffer, 1991).

4.2.1 Income

Per capita and household incomes in the Town of Collingwood are below levels for Simcoe County and Ontario. In 1986, combined male and female income and household income were approximately 10 per cent and 20 per cent below the average for Simcoe

County and Ontario respectively. These percentages are largely unchanged since 1981 (Statistics Canada, 1986).

4.3 Investment

Major new industrial development has not materialized in recent years, although there has been some moderate investment in upgrading existing operations. Other than the establishment of Lemmerz industries in the mid 1980's, new industrial investment has been minor since the cancelling of the Industrial Incentive Program. Service and tourist industries and recreational home construction are mitigating to some extent, the loss of industrial investment, but those displaced from traditional industrial jobs have experienced problems assimilating into new roles (Sheffer, 1991). With the demise of the ship building industry, the manufacturing emphasis has shifted to automotive parts, but the slowing automotive industry is now causing slow or negative growth in associated Collingwood industries. Daal's (Bendix), a manufacturer of safety restraints for automobiles once employed 800 people, but a long steady decline in employment levels culminated in mid 1990 when it ceased operations. Goodyear has also seen declining staff levels over time and although there has been a slight upturn in the past year, it has no current plans to expand operations or return to former employment levels. L.O.F. Glass, the town's current major employer is an exception to trends plaguing other local firms. It has experienced steady growth since its inception and although it is currently experiencing the pains of an automotive sales slump, the company has tentative plans to add capacity over the next several years.

A further factor that may be limiting local investment is the high number of local industries that are U.S. based. The recent high value of the Canadian Dollar, interest rates and the increasing costs of social program contributions are making it expensive to do business in Canada. U.S. companies are currently opting to expand in cheaper American or Mexican markets. Although approximately 30 per cent of the local population remains employed in manufacturing jobs, their future is uncertain, and since the plants no longer occupy or rely on the waterfront, the area is attracting investment of another nature.

The vast majority of recent investment has come from recreation and tourism and will continue to do so in the future, albeit at a slower pace than the past six years. Significant

new construction has occurred in Collingwood during the 1980's and the majority of that has been in the form of townhouse condominiums and related amenities. Table 4-6 illustrates the number of new buildings since 1982, along with their construction value and type.

Table 4-6
Town of Collingwood
New Building Construction
1982-1990

Year	Residential Value	Total Units	Condo Units	Commercial Value	Industrial Value	Institutional Value
1982	\$1.3	22	0	\$0.6	\$0.4	\$0.2
1983	\$5.5	143	58	\$0.8	\$1.1	\$0.9
1984	\$2.2	33	0	\$2.8	\$0.3	\$3.6
1985	\$5.7	96	25	\$2.4	\$3.7	\$0.1
1986	\$21.7	358	228	\$2.2	\$0.5	\$1.6
1987	\$28.4	366	213	\$3.7	\$12.7	\$0.8
1988	\$35.3	443	351	\$5.3	\$2.5	\$2.6
1989	\$51.4	559	232	\$6.0	\$3.5	\$1.8
1990	\$11.0	101	68	\$2.3	\$1.3	\$5.5
Total	\$162.5	2,121	1,175	\$26.1	\$26.0	\$17.1

Values in \$,000,000

Source: Collingwood Planning Department, 1991

Table 4-6 illustrates that over the past 8 years, commercial and industrial investment have been virtually identical at \$26 million, while residential investment has been six times as great at \$162.5 million. Of this figure 55 per cent of the units built can be identified as condominiums. With the exception of 1990, in which all sectors declined due to the wide spread recessionary circumstances, it is evident that industrial investment has been sporadic relative to steady increases in the commercial and residential sectors. These figures further document the shift from an industrial base to a recreational/tourism and service economy.

Future development investment will follow the latest trends, as there are still approximately 2,600 approved, but yet to be built condominiums. The CSL proposal for the shipyards property purports to add a further 900 residential units of varying type and 75,000 - 100,000 square feet of retail space. The rediscovery of natural environmental assets has

prompted this investment. Millions of dollars have and will continue to be spent in order to take advantage of Collingwood's amenities and less industrialized waterfront.

The changing nature of development is also gradually altering the taxable assessment of the town. In 1983 the taxable assessment was split at 52 per cent industrial/commercial and 48 per cent residential. Residential development is now the dominant contributor representing 53 per cent of the tax base. New tourist and service business growth has compensated for a number of the losses in the manufacturing sector. Industrial/commercial assessment still represents a healthy 47 per cent of the tax base, although its position is expected to further erode (Sheffer, 1991).

Other development investments that will take place, although smaller in dollar amounts, will be equally important in terms of quality of life and spin off economic benefits. These investments will be directed at the natural and leisure environments and will be focused on such projects as the development of the RAP 'Enviro-park' adventure playground in Harbourview Park and the Georgian Trail.

Future development investment must also come from the Town of Collingwood as an active partner in the reopening of the harbour to the public. Access must be provided to and from the water and appropriate land and water based facilities must be developed. Of importance here, are investments that will return benefits to the community. The establishment of recreational amenities, transient boat slips and events that become attractions will draw people and expenditures to the town, (Dunbar, 1991).

5.0 EXISTING USE

The existing harbour and shore uses are a mixture of commercial, industrial, parkland, recreational residential and marinas as depicted in Map 5-1. The present harbour uses represent 150 years of labour, prosperity, decline and change. The present day harbour is in transition, the once natural, then industrialized basin, is again transforming and struggling to find a suitable match between its past, present and future uses.

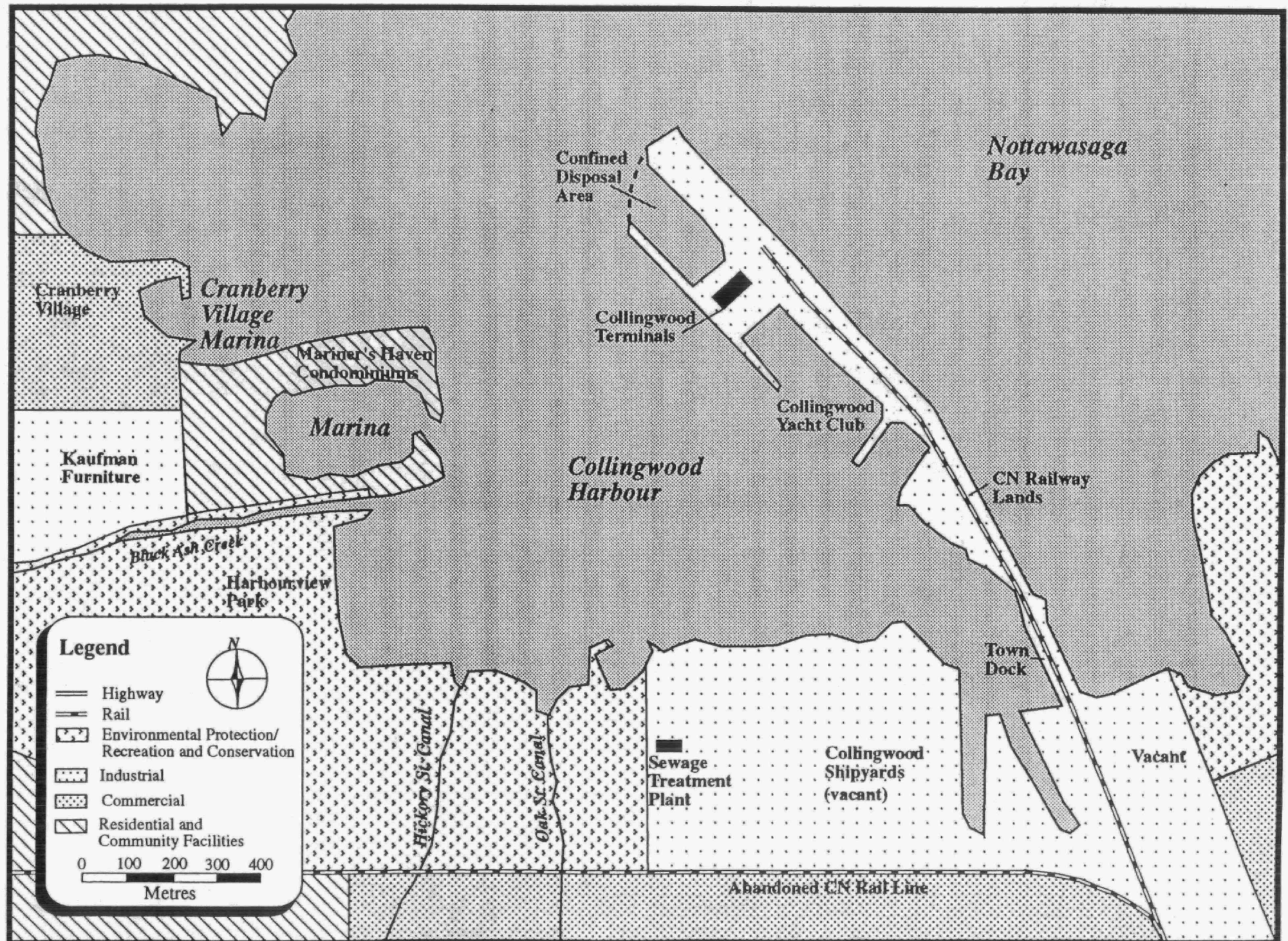
5.1 Industrial Land Use

Remaining industrial uses are situated along the eastern portion of the southern shore and the entire eastern arm of the harbour. The present intensity of industrial use is light. The Collingwood Terminals grain elevator is the only remaining active industry. The Terminals were for sale in 1988 and on the verge of closing down, but the misfortunes of two elevators in Midland and Victoria Harbour have brought a reprieve to the Collingwood operation. Current employment stands at 10 and there are no plans in the foreseeable future for growth or decline. The Terminals utilize the harbour as a commercial body and will likely remain as the only surviving link to the harbour's industrial past (Ruppert, 1991).

The spit leading to the terminals is owned by CN Rail and is occupied by an access road to the elevators and an unused rail line. The Collingwood Yacht Club is leasing portions of the land and water lot for their facilities. Recreational fisherman utilize the shoreline walls for fishing and the boat ramp for small craft launching.

The remaining industrial land has been placed in a holding zone that will prevent development prior to the completion of town studies, (Ferrer, 1991). The property remains in the ownership of Canadian Shipbuilding and Engineering Ltd. (CSL) and is comprised of 18 ha of vacant land, dry docks and several old buildings. The Town of Collingwood would like to obtain the latter for future cultural uses, (Dunbar, 1991).

Map 5-1: Adjacent Existing Land Uses



The town's sewage treatment plant is located to the west of the CSL lands on the harbour shore between Birch and Beech Streets. This plant services the entire town and releases its treated effluent into the harbour. The existing plant provides secondary treatment and is designed to support a population of up to 20,000. The capacity of the sewage treatment plant is sufficient to meet the needs of the town during the current planning period, (to the year 2011) and beyond. The town's most optimistic projection estimates that the 2011 population will be 15,320. While the sewage treatment plant capacity is sufficient to meet projected needs, operational upgrades and infrastructure improvements are required so that the system operates more efficiently and can better handle peak flows.

Studies and plans are currently under way to upgrade the treatment in the plant and reduce the large amount of storm water infiltration from storm sewers and leakage through old pipes. It is also intended that the sewage treatment plant upgrading prevent any future sewage overflows that on the rare occasion have released untreated effluent directly into the harbour.

5.2 Commercial Land Use

Commercial land uses in the harbour are limited to marina facilities. The smallest facility is the town dock, which simply consists of 10 slips that are let on a seasonal basis. The next largest facility is the Collingwood Yacht Club which operates 85 slips out of a basin to the south of the Collingwood Terminals. All 85 slips are occupied on a seasonal basis, with no transient space available. The largest commercial marina operation in the harbour is the 112 berth Cranberry Marina, which is situated along the western shore, south of the Cranberry Village development. Of the 112 slips, only 2 are reserved for transient use.

5.3 Residential Land Use

Two residential uses currently exist in the harbour and they are both of a recreational nature. Mariner's Haven is situated on the west side of the harbour. It consists of 32 luxury duplex villas which have sold for as much as \$500,000. Included in this development is an exclusive private marina for villa owners.

To the North of Mariner's Haven is the waterfront land of Cranberry Village. This development supports approximately 500 condominiums on the waterfront and land south of Highway 26, with future potential for over 1,500 units. Cranberry Village has been evolving since 1976 and currently offers a wide array of units and recreational facilities. The latter include a golf course, marina, riding trails, beach and tennis courts. The recent economic slump has forced Cranberry Village to file for bankruptcy, although it is anticipated that a successful restructuring and work out will allow the project to continue to grow (Sheffer, 1991).

5.4 Recreational Use

Existing recreational uses consist of shoreline parkland and water based recreation in the form of fishing and pleasure boating. Parkland at the harbour is confined to the south-west in Harbourview Park, while fishing and boating are spread throughout the harbour. Shore based fishing activity is concentrated on the CN Rail spit, while watercraft based fishermen make use of the entire harbour waters. Marinas are currently concentrated to the east and west sides, but boating activity takes place across all harbour waters.

5.4.1 Parkland

Harbourview Park is located on the western portion of the south shore. This 17 ha property is owned by the town and is currently used as a passive facility with picnic, trail and playground components. Approximately 50 per cent of the park is comprised of wetlands and these are designated as environmental protection areas. Black Ash Creek, Oak Street Canal and Hickory Street Canal, the three water courses that drain into Collingwood Harbour all have their outlets in the park.

Collingwood has ample supply of parkland, but needs to improve on the quality of the park facilities offered, (Dunbar 1991). Harbourview Park as a result of few facilities has historically not been fully utilized in relation to its location and the size of the local population. Efforts have been made to increase the attractiveness of the park through the provision of a playground and boardwalk. The playground is being well utilized on weekends, while the boardwalk is drawing individuals and groups for walks and nature

appreciation. The boardwalk is becoming increasingly popular with organized seniors and physically challenged groups.

5.4.2 Swimming Areas

Swimming is virtually non-existent in the harbour today, as its retained industrial nature, water quality and heavy boat traffic makes the activity unsafe. However, the desire for body contact recreation in the harbour still exists and is supported by the use of the harbour for such activities by some residents, (Krantzberg, 1991).

5.4.3 Pleasure Boating

The harbour, although prone to algal growth, remains a safe boating haven, protected from the frequent rough conditions that characterize Nottawasaga Bay. Boating traffic within the harbour is largely generated from the 207 internal slips and an additional 392 slips within the immediate area at Rupert's Landing and Lighthouse Point Marinas. According to Statistics Canada, 15.4 per cent of households owned at least one type of boat in 1987. Based on this statistic, resident boat ownership within the Town of Collingwood and the Georgian Triangle stand at 900 and 3,600 boats respectively (Dillon, 1990).

Boat ownership is greater among seasonal households and when these statistics are taken into account, total boat ownership in Collingwood and the Georgian Triangle could be as high as 1,400 and 10,000 respectively. The current demand for permanent marina slips is estimated to be 2,000 (Dillon, 1990). This is roughly equivalent to the current supply. There is however an acute shortage of transient slips.

At present Collingwood harbour is not a boating destination. It has few transient facilities and little inviting waterfront development. As the waterfront is largely invisible from the town, so is the town invisible and inaccessible from the water. The provision of additional boat slips and the harbour's ability to attract boaters can be financially lucrative for the town.

By applying Ministry of Tourism multipliers to the average \$48.18 the average boater spends per day, (Dillon, 1990), it can be seen that economic impacts of boating are far

greater than the initial expenditure. By applying the output multiplier of 2.34 for tourism as a whole to the daily boating expenditure, the total output is \$112.74/boater/day. The application of the 1.25 income multiplier will produce Ontario resident income of \$60.23 for every boater day. Assuming the local boat supply to be equal to the estimated current demand for 2,000 slips and that the average boater logs 36 days use per season, with two people per boat, the local boating market will inject approximately \$7.0 million into the local economy on an annual basis.

This number will then multiply to provide a total output of \$16.38 million and incomes of \$8.75 million, (Recreational Boating in Ontario, 1985). A direct employment multiplier of 32.2 person years per \$1.0 million in expenditures and an indirect employment multiplier of 1.77 applied to direct employment will yield direct and indirect employment associated with local boating of 225 and 398 person years of employment respectively, (Recreational Boating in Ontario, 1985).

5.4.4 Fishing

The Collingwood area and most notably the area in the vicinity of the Beaver River at Thornbury is renowned for some of the best rainbow trout fishing in the province. The harbour itself plays host to quite an active recreational fishery. According to 1985 MNR Creel surveys, fishermen catch significant numbers of rainbow and lake trout in the spring and fall, while yellow perch are fished throughout the year. Bass, walleye and northern pike also frequent the harbour waters. During open water seasons boats and harbour walls are utilized for fishing. In winter months, approximately 50 ice huts are in use on the harbour (RAP Stage I, 1990).

Angling data suggests that the total local resident angling effort amounts to approximately 167,000 rod hours per year. The average fisherman fishes 18 days over the course of a year and spends roughly 4.5 hours per session. Based on angling survey data, it is estimated that there are 2,260 resident anglers in the Collingwood area and a further 640 non-resident anglers (Dillon, 1990).

It is estimated that the average fisherman produces a consumer surplus of \$29 per day, (RAP Overview Economic Assessment, 1990). Dividing local rod hours by the average hours fished per day, produces a figure of 37,111 annual angling days in Collingwood Harbour. This translates into an economic input into the local economy by fishermen of \$1,076,000 annually.

5.5 Linkages

Land/water linkages at present are highly unstructured. Other than the boardwalk and paths of Harbourview Park, public links to the water are via dead end streets and the service road to the Terminals. Pedestrian routes have not been established and much of the road access involves the mixing of vehicular and pedestrian traffic.

5.6 Municipal Uses

Municipal use of the harbour water is limited to the disposal of treated sewage effluent. The town draws its water directly from Nottawasaga Bay to the east. The Collingwood sewage treatment plant is the only municipal point source of effluent into the harbour. The plant was originally equipped to provide primary treatment and was upgraded to provide secondary treatment which included phosphorus removal at a cost of \$6 million in 1982. Further quality improving operational changes were initiated in 1986. Currently excess sewage is allowed to by-pass the plant and discharge directly into the harbour when plant capacity is reached during peak storm flows. Secondary treatment and operational changes have significantly reduced levels of phosphorus, metals, BOD and suspended solids, but on occasion the plant still fails to meet provincial requirements due to rare overflows. In 1990 the plant was discharging 21,800 m³/day (89 per cent of capacity), and under normal conditions, treated effluent discharged to the harbour has been meeting provincial guidelines since 1987.

6.0 FUTURE AND BENEFICIAL LAND USE

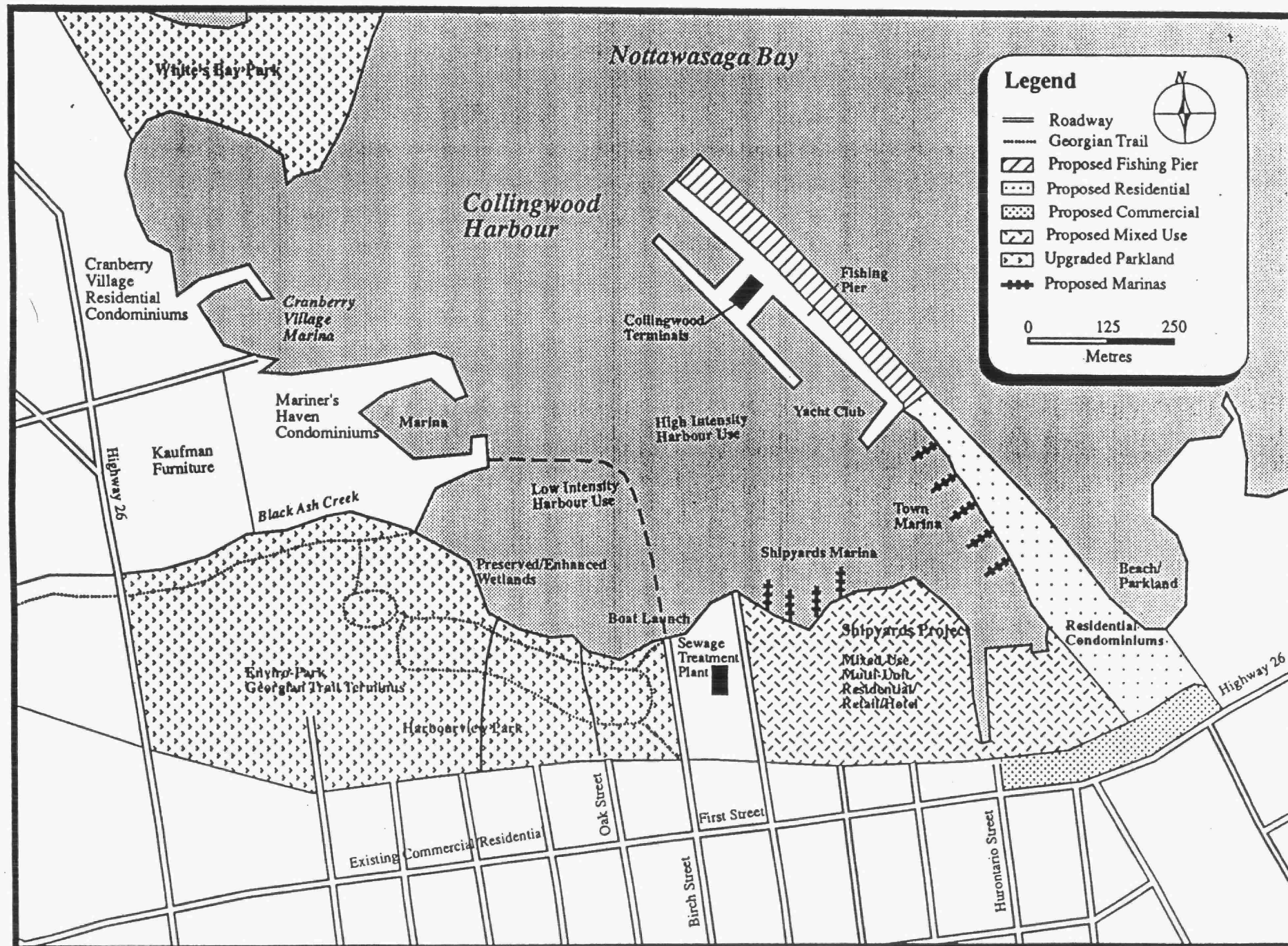
Land uses adjacent to the harbour are in the midst of change. For over a century, the harbour was developed and functioned as an industrial and commercial port of significance, but the demise of Collingwood as a transportation and ship building centre has opened the door to change. Recreational and residential uses have taken advantage of some vacant harbour lands and the redevelopment of the Shipyards site promises to redefine the harbour.

Unlike other RAP areas such as Hamilton Harbour and the St. Marys and St. Clair Rivers, industrial uses are no longer contributing to the contamination of the water body and do not contradict the emerging recreation and leisure uses. With all shoreline industry except for the Collingwood Terminals removed and the town's other manufacturing industries reducing their demands on the sewage treatment plant, a path has been set for a transition back to natural, recreational and public uses of the harbour.

6.1 Waterfront Master Plan

The Town of Collingwood has commissioned a Waterfront Master Plan that is currently being compiled to guide the redevelopment of the harbour (refer to Map 6-1). Key elements of the plan include improved aesthetics throughout the harbour, retention and improvement of the natural environment at Harbourview Park, increased access and vistas throughout, new residential uses on the CN lands and new public marina slips and services along the eastern shore. The current plan calls for an orderly spectrum of uses ranging from the industrial grain elevators, to intensive residential, commercial and marine uses. A natural, less intense environment at Harbourview Park and existing recreational residential resorts will complete the array of uses.

Map 6-1: Future Proposed Uses



6.2 The CSL Shipyard Proposal

The project with the greatest potential to change the harbour is the redevelopment of the Shipyards site. The actual form of this development may not be as important as the opportunities that it will provide in terms of access and linkages, aesthetics, economic spin offs and waterfront activity. The development will also integrate the harbour into the downtown.

The shipyard's development plan calls for a combination of land and integrated water uses through the introduction of canals and islands. Approximately 900 mixed use residential units are proposed, with 40 per cent of these aimed at retirees. Commercial retail space in the order of 75,000-100,000 square feet is also proposed, as is a resort hotel. In contrast to the existing recreational developments in town, the goal of CSL is to provide an activity filled residential and commerce centre. Water uses envisaged in the proposal include water transport based on canals and marina facilities, including transient dockage.

The construction value of the CSL project is estimated to be over \$200 million, of which 50 per cent could go directly to local wages during construction. In addition to the real estate investment, the town will gain an expanded tax base, employment, diversified housing and retail selection, an accessible waterfront, an additional attraction and increased urban activity, (Martin, 1991).

6.3 Future Industrial Use

Industrial uses in the harbour and surrounding areas seem likely to continue to decline further. Reduced industrial employment in the manufacturing sector is expected to continue as a result of mechanization, business departures generated by high Canadian operating costs and actions by the town to rezone harbour industrial lands. Although the town's industries are no longer associated with the harbour, their decline signals a potential reduction in the use of the harbour for the disposal of industrial effluent. It is likely that the only harbour front industrial use in the future will be the Collingwood Terminals. The retention of the Terminals is generally viewed as positive. Although an industrial use, it does not contribute to effluent at the sewage treatment plant and adds a compatible diversity to the harbour landscape. The site of a Great Lakes freighter along the dock, remains a

tourist attraction and the presence of the ships and the monolithic elevators serve as reminders of past times and a former bustling industrial port.

6.4 Future Commercial Use

Commercial, retail and service uses in the harbour are likely to expand. Both CSL and the town see the need for expanded services and marina facilities and they are making plans for them. CSL facilities will be developed to serve the residential owners and transient boaters who come to shop, dine and stay within the development. The town sees the need for a full service marina that will provide resident and transient docking, fuel, pump outs, small repair services and ground support facilities such as comfort stations, parking, boat launching and storage (Dunbar, 1991). The provision of berths for those who do not own a unit in the resorts will allow locals access to dockage, potentially attract new residents in search of such facilities and provide the transient boater with access to Collingwood from the water.

In addition to commercial boating facilities, the re-introduction of cruises will attract tourists and create a historic tie to the past lake passenger service that once departed from Collingwood. Cruises could take the form of destination trips to Thornbury and Wasaga Beach or be shoreline and inner harbour cruises. Cruise ships could be the tour boat type as found at Toronto's Harbourfront or could take on a nostalgic theme such as the Segwun which runs between Gravenhurst and Port Carling. These tours are very successful and are proven compatible with other boating and water related uses. A feasibility study should be undertaken to assess the appropriate nature and demand for such cruises.

6.5 Future Residential Use

The western end of the harbour is already extensively developed for recreational and residential uses. These will continue to be intensified, especially with further growth of Cranberry Village. The harbour will likely see the introduction of a new residential area to the east with the eventual development of the CN spit. Although CN is currently looking at a request for renewed rail service to the Collingwood Terminals, the land's future is being viewed in terms of residential development. Current economics do not warrant the immediate development of the lands, but residential development has been studied. CN

Real Estate is currently in favour of the residential use of the property being discussed in the town's Waterfront Master Plan. Like the CSL proposal, the urban nature and location of the CN lands will likely attract a permanent as opposed to a seasonal population.

Recent developments in and around Collingwood have not been placing great strains on the local infrastructure due to their self contained and recreational nature. While the developments require municipal services equal to permanent housing, they are generally not occupied on a full time basis and have self contained social and recreational amenities. Developments to date have not necessitated significant improvements in social, cultural and recreational programs. If future developments are to take on a permanent nature and cater to retirees as well, detailed assessment will have to be carried out on the physical and social demands that will be made on the town.

6.6 Future Recreational Use

The future recreational use of the harbour and its adjoining lands is expected to remain predominantly water and land based recreation. Sport fishing, pleasure boating and use of Harbourview Park will continue to attract tourists and residents alike. These activities are expected to rise dramatically with improvements to harbour quality and facilities. Future improvements to the quality of the harbour and associated facilities will enhance the activities that are already enjoyed on its waters and shores. As opposed to acquiring more lands upon which to create new recreational uses, the harbour and town will be best served by the creation of new activities that appeal to the masses, both local and tourist alike, (Dunbar, 1991). Activities that draw people and expenditures to the town, as opposed to physical investment in land and facilities are perhaps the most beneficial recreational uses for the future.

6.6.1 Future Parkland

The harbour waterbody itself is the town's largest park, while the shore based uses are its associated amenities. The harbour and its parkland are primarily utilized by local residents. Access and visibility of the harbour and Harbourview Park are limited and as a result overlooked by non-residents. Once at the harbour, there is little to find aesthetically pleasing and few activities if your visit is not purpose oriented. In order to attract tourists

and more residents, emphasis should be placed on the quality of the harbour, along with preserved access and vistas.

The quality and attraction of the harbour's potential activities will bring the participants and the services that they require. The existing Harbourview Park will act as a passive and educational park base. The educational adventure playground enviro-park that is already under way will help educate the users towards the importance of the environment while, also providing a relaxing solitude away from the activity of the rest of the harbour. Coupled with the adventure playground could be the establishment of physical activity stations, with environmental issues posted at each station. Harbourview will also serve as a link between the natural environment and the man made activity of the harbour lands. Its trails will handle the transformation from the proposed activity of the shipyards and its urban waterfront vistas to the natural beauty of the soon to be completed Georgian Trail.

6.6.2 Future Swimming Activity

Although it is the aim of RAP to improve water quality to the point that it is safe for swimming, it is not planned that there will be any form of organized or encouraged swimming within the harbour. The heavy boat and fishing traffic coupled with the stigma of the sewage treatment plant do not make it safe or necessarily desirable to swim in the harbour. General Swimming is better left to the areas many beaches, with harbour swimming left to event functions such as organized charity/celebrity swim meets. These could act as a tourist attraction and promotion for the RAP program once the water quality is sufficiently improved.

Swimming is currently available to residents and visitors at Sunset Point Park one kilometre east of the harbour where beach and picnic facilities are provided. An area of vacant land immediately east of the harbour adjacent to the CN spit presents the best, if not only opportunity for future body contact recreation in the vicinity of the harbour. These lands could be incorporated as an eastern extension to the harbour for recreational purposes. The location and shelter provided by the spit make it an ideal location for safe body contact activities sheltered from westerly winds and resultant wave action.

6.6.3 Future Pleasure Boating

There is an active pleasure boat market in the harbour and vicinity and if current plans for new marinas are realized, boating activity will show a sharp increase. The CSL and the Waterfront Master Plan proposals could add 500 slips, related marine services and protective break waters to the harbour. At present, the most significant constraint to boating is the limited number of public and transient slips available.

In order to benefit the greatest number of harbour users, future boating facilities should evolve in a manner that locates the facilities in a designated area of the harbour and provides facilities for those that are in need and will bring the greatest long term economic benefits. Future boating in Collingwood harbour needs to break away from the simple perspective of maximizing seasonal dockage charges and foster a more comprehensive strategy of maximizing direct and indirect economic benefits associated with a mixture of local resident and transient facilities. The general guideline has been to provide transient slips equal to 25% of seasonal slips, (Marinas, A Guide..., 1981). By applying this guide to the 599 slips in the harbour and vicinity, there is currently a need for 150 transient slips. This need will increase as additional slips are provided and transient dockage warrants.

It is estimated that the average boater spends \$48.18 per day per person (Dillon, 1990). Assuming an annual boating season of June through August and an average 36 days use per season with two individuals per boat, each transient or permanent slip introduced would add approximately \$3,500 to the local economy on an annual basis. If only half of the 500 slips being proposed by the town and CSL were to be introduced to the harbour, the results would be an influx of \$875,000 in direct expenditures into the local economy on an annual basis before multipliers are considered.

6.6.4 Future Fishing

While the present condition of the harbour does not appear to have hurt recreational sport fishing, it is likely that improvements to the water quality and attractiveness of the harbour may well attract a greater number of fish and fisherman. The redevelopment of the harbour affords opportunities to promote increased sport fishing by creating new fish habitats and spawning beds through the placement of ledges and rubble along marina walls and under

docks. Pebble beds, logs and vegetation can be placed and encouraged in the wetlands area of the south-western shore. Fishing, especially shore fishing, can be a relatively inexpensive sport and one that is available to a large number of residents and tourists alike. Through the provision of shore piers, launches and habitat creation, the current fishery can be expanded and more people will be able to enjoy fishing as a recreational pursuit.

Preservation and creation of fishing opportunities must be forefront in the redevelopment of the harbour. The windswept eastern spit is home to numerous fishermen, even in its uninviting state. Any redevelopment of the spit must recognize its fishing attraction and endeavour to maintain and improve access and facilities to fishermen. Harbourview Park and its wetlands present a second prime fishing location. Simple fish habitat creation such as the provision of gravel beds and tree stumps can greatly aid fish habitat. The provision of a small pier in the park would allow shore based fishermen to extend into key off shore locations.

The Georgian Triangle Spring Trout Derby is a popular event and in a similar vein, a fishing derby confined to the harbour area would promote the fishery and encourage broad based participation. For the past three years, the 22 day long Spring Trout Derby has been drawing between 2,300 and 2,500 participants per year, (Thompson, 1991). These numbers reflect the high level of fishing interest in the Georgian Triangle that could be attracted to a localized harbour derby. Given the Trout Derby participation rate, even a smaller three day harbour derby could be expected to draw in excess of four hundred participants and approximately \$35,000 in related expenditures.

6.7 Future Linkages

Future linkages to the harbour must not be confined to roads and paths alone. It is not enough to enjoin the harbour area to the town through a limited number of formal channels. Links must flow in all directions to truly make the waterfront part of the community fabric.

In order to optimize potential assets, the Town of Collingwood and its harbour must be linked to each other, the region and province by reputation as a desirable destination point. In order to establish this reputation, land and water linkages are required to bring people into the area, and through it to the attractions and services beyond.

Localized physical links could include measures such as an urban extension of the Georgian Trail through the harbour lands, along with visible access points to the harbour, trail and park. Development can provide links by incorporating dual frontage commercial operations that front on both First Street and the harbour, a transient marina for regional tourists and shoppers and high quality integrated development that does not differentiate where the town ends and the harbour begins.

Links to the region and province can be established by the formation of large scale annual events that will draw tourists and purpose visitors to the town. Fishing derbies, boat races and celebrity swim events could accomplish this goal. A further provincial wide link can be obtained by establishing Highway 26 as the province's "Recreational Highway". Tourism brochures could promote a "Recreational Highway" tour with stops in Wasaga Beach for swimming, Collingwood Harbour for fishing and boating, Craigeleith for windsurfing and slide rides, Thornbury for apple picking and canoeing, and more as you continue up the shoreline.

6.8 Future Municipal Use

Due to practicality, economics and the potential to create greater environmental problems elsewhere, Collingwood Harbour will likely remain as the receiving body for treated effluent from the town's sewage treatment plant. The capacity of the plant is sufficient to meet expected population levels for some time to come, yet the quality and quantity of the effluent must continue to be improved. The prospect of improved quality and reduced quantity of effluent is good thanks to town initiatives and cooperation by its residents and business community.

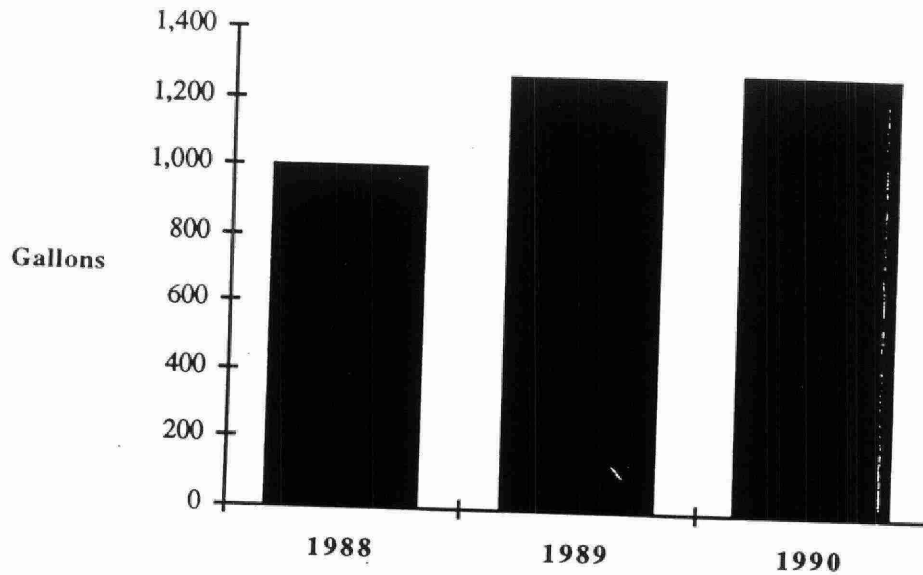
One of the most effective ways of improving water quality will be the continued decline of effluent discharge to the harbour as a result of water conservation. Water demand management can be one of the most cost effective remedial actions. Water has long been regarded as a free resource and has led to waste and inefficiency in the use of water. The vast majority of Canadian municipalities charge for water by flat rate or declining blocks. These methods do not encourage conservation. The relationship between water consumption and water cost is strong. Environment Canada in 1988 estimated that for

every \$1.00 increase per cubic metre of water used in Ontario, there would be a 21 per cent decline in water consumption. This in turn would create an equivalent loading reduction to sewage treatment plants. Reduced loadings would benefit the harbour through reduced emissions, help prevent peak flow upsets, increase the operating life of plant components and increase efficiency (Rivers-Kalinauskas).

The town has already adopted the above initiative through its water conservation and metering program. Metering of homes and businesses, conservation measures and recycling by many industries has effectively reduced water consumption. Although total water consumption has continued to rise due to new residential developments, the sharp annual increases of the past have been significantly curtailed. In 1989, water consumption rose by 26 per cent of the 1988 use. Subsequent to the adoption of conservation measures, 1990 consumption rose by only 1 per cent over 1989 consumption, (Figure 6-1). This reduction in use is expected to continue with increased consumer awareness, (Collingwood PUC, 1991). The continued use of metering, conservation policies and price as a means to control demand should result in improved water quality and operational cost savings.

Recent improvements to the operation of the sewage treatment plant, on going studies and the pretreatment of waste by local industries have generated major strides in the improvement of effluent quality. The upgrading of the plant to tertiary treatment, pretreatment, elimination of plant upsets and resolving problems associated with storm sewer connections and ground water infiltration still require further study, but are necessary for the continued improvement of the water quality in the harbour.

Figure 6-1
Town of Collingwood
Water Consumption
(000,000s of Gallons)



Source: Town of Collingwood,
Public Utilities Commission

6.9 Future Aesthetics and Value

Collingwood Harbour evolved as an industrial port and as such, little attention was given to aesthetics and values. This lack of concern is evident in the harbour today. The past industrial nature of the harbour had little need for aesthetic values, yet the emerging recreational/tourism uses of the water body will demand high visual quality. The aesthetic quality of the general Collingwood area has been evident to residents and tourists for over a century and it is now time to recreate those same qualities within the harbour. The aesthetic qualities of water frontage have significant monetary value as evidenced by waterfront condominium investment. An attractive waterfront can act as a catalyst for increased value for the entire town if the waterfront is an integral part of the community. Ultimate care must be taken to ensure an enjoyable harbour environment. This will serve as a catalyst for increased use and in turn spawn economic benefits for the town.

Aesthetics and value will be added to the harbour by the provision of future beneficial uses as detailed in this section. The location, magnitude and implications of such uses are summarized in Table 6-1. In order to provide beneficial uses that add aesthetics and value to the harbour, these uses must be carefully approached and planned as they will reshape the nature and future of Collingwood Harbour. These uses must not only be appropriate for the time and place, but must also be consistent with the goals and objectives of remedial actions.

**Table 6-1
Future Harbour Usage**

Harbour Use	Area of Use	Magnitude of Use	Developmental Changes	Remedial Action Implications
Industrial	Eastern Spit	Light	None	None, Does Not Contribute to STP Effluent
Commercial	Southern Shore	Intense	Marinas, Hotel, Retail	Adds to STP Effluent and Water Consumption
Residential	Eastern Spit and Southern Shore	Intense, Medium and High Density Units	Townhouse and Apt. Condos, Related Rec. and Social Amenities	Adds to STP Effluent and Water Consumption
Boating	Throughout Harbour	Moderate to Intense, Facility Dependant	Commercial Marinas, Launches, Parking	May add to Pollution, Grey Water Discharge
Fishing	Accessible Shorelines, Open Water	Intense, Seasonal	Fishing Piers and Facilities	Magnitude Dependant on Water Quality
Parkland	Harbourview Park	Light to Moderate	Enviro-Park, Links, Improved Facilities	Public Pollution/RAP Education Centre
Swimming	East of Harbour	Moderate to Intense, Seasonal, Dependant on Facility	Beach, Change Houses, Parking	RAP to Ensure Actions Don't Detrimentially Affect Surrounding Water Quality
Linkages	Shore, Water and Mental	Moderate to Intense	Shore and Water Access Points, Reputation, Events	Greater Use Requires Maintained Water Quality
Municipal	Sewage Treatment Plant, Harbour as Receiving Body for Effluent	Intense, Flows will Grow with Development if Conservation not Practiced	Improvements to STP, Town Infrastructure and Increased Metering	Continual Source of Harbour Pollution

7.0 COSTS, BENEFITS AND FUNDING FOR REMEDIAL ACTIONS

The remedial actions proposed by the Collingwood RAP team are set out in Chapter 2.0. Their implementation will result in both costs and benefits to the Town of Collingwood. It is not the purpose of this chapter to try and quantify what these costs and benefits might be, rather its purpose is to set out a general framework for undertaking an analysis of the different options given the changing socio-economic circumstances in the community.

As previous chapters attest, the Town of Collingwood is in a state of physical and socio-economic transition. The harbour and adjacent lands promise to play a significant role in the future evolution of the community and therefore improved water quality is an important asset. It is equally important to note however, that at a certain level there will likely be diminishing benefits from further improvements in water quality. It is also true that at some point the incremental costs of achieving additional water quality improvements will outweigh the benefits.

7.1 Costs of Pollution

A simple framework that can be utilized to view the costs of water pollution can be expressed via the following equation.

$$\begin{array}{ccccccc} \text{Waste Disposal} & = & \text{Pollution Prevention} & + & \text{Pollution Avoidance} & + & \text{Pollution Damage} \\ \text{Costs} & & \text{Costs} & & \text{Costs} & & \text{Costs} \\ & & & & \underbrace{\hspace{10em}} & & \\ & & & & \text{Pollution Costs} & & \end{array}$$

The costs of dealing with pollutants affecting the harbour is the sum of pollution prevention costs and pollution costs. Pollution prevention costs are those costs incurred either by

firms or individuals in the private sector or by government to prevent either entirely or partially the pollution that would result from some production or consumption activity.

Pollution costs can be broken into two categories. One, the private or public expenditures undertaken to avoid pollution damage once pollution has already occurred and two, the welfare damage of pollution. Once pollution has occurred because individuals or government have not been willing to accept the costs of pollution prevention, the community at large can either choose to avoid the damage by undertaking some defensive or remedial actions, or it can simply accept the consequences. In the first instance alternative lines of action may take the form of public expenditures on various kinds of clean up programs, filtration systems or on commuting to other areas to enjoy activities at unpolluted locations.

In the case of pollution that is not prevented or avoided the result is welfare damage. The most tangible pollution damage takes the form of observable deterioration of both living assets and living things, including human beings. In the case of Collingwood harbour, welfare costs result from the deterioration of fish stocks and aquatic organisms as well as from health problems that could arise in humans through ingestion or contact with polluted water.

7.2 Distribution of Costs and Benefits

Who pays? Who benefits? These are critical questions and they define further dimensions that must be taken into account in the evaluation of remedial options. It is unlikely that the winners and losers associated with the different alternatives will be identical and therefore in evaluating them and formulating an overall strategy it is important to determine the net gains and losses among the various groups in the community and then somehow balance the distributional affects.

7.3 Methods of Financing Remedial Actions

A variety of mechanism are available for financing remedial action but each has advantages and disadvantages and each bears a different distribution of costs and benefits. The following are some of the more commonly discussed mechanisms. It should be noted that

Ontario Ministry of the environment has just commissioned a study to look at the potential funding mechanisms for the implementation of remedial action plans.

7.3.1 Effluent Charges

For the purposes of this discussion an effluent charge would be a fee levied on a polluter to allow them to discharge untreated water into the harbour. The charge would be calculated on the basis of a dollar amount for each unit of polluted water created and discharged.

The advantages of this funding mechanism given a proper calculation of the charge is that it provides a mechanism for making polluters pay for their degradation of an environmental resource. Unfortunately what looks good in concept is deceptively simple. First, there is a difficulty in establishing the proper effluent charge. To do this requires substantive knowledge of the external environmental costs created by the polluter as a result of its discharge of effluent. If the polluter is a sole source the calculation is easy, but in a urban watershed such as Collingwood where the polluter is but one of many contributors, the calculation becomes more difficult.

A second consideration when examining this mechanism is that the charge will likely be internalized by the polluter and passed on to the customer. Another danger with effluent charges particularly in fragile economic times like the present is that firms may simply find they make the cost of production too high and as a result they may shut their doors and move elsewhere. The repercussions of this event are both positive and negative. On one hand the aquatic environment and certain segments of society will benefit from improved water quality. On the other hand other segments of society will be negatively impacted through job and tax losses.

Monitoring and enforcement are other considerations that must be taken into account by an authority that opts for this funding mechanism. Both activities are costly and both require government commitment to make the system work.

7.3.2 Limited Discharge Permits

The mechanism of discharge permits is beginning to see implementation in certain US jurisdictions. An advantage of this system is that it recognizes enforceable property rights and sets a quota on an entity's right to use the public domain. It is also seen as a market driven mechanism. Once again however it is a concept that is not as simple as it first appears. For example, if trading of these rights is allowed how should it occur? The EPA only allows trading if the contracting entity initially meets the agencies strict pollution abatement technology standards. Another problem is the definition of geographic market boundaries. There are also considerations of monitoring, enforceability, information and transaction costs.

7.3.3 User Pay Schemes

Typical water uses include water supply, commercial fishing, sport fishing, recreational boating and other water based recreation and water oriented tourism. Various types of user fees and licenses can be implemented for these uses. Fees will be limited however by the elasticity of demand, availability and cost of substitutes and administration costs. Current studies show that about one third of benefit results from water use and two thirds is non related use. Beneficiaries of non-use value are usually taken to be residents or visitors to the surrounding area. Mechanisms include a variety of vehicles such as property taxes, income taxes, lotteries, special funds and harbour user fees.

An advantage of a charge system is that it purports to draw funds from those who most desire improved water quality (ie. the users of the resource). A disadvantage of this type of system is that it is not a direct mechanism for holding polluters accountable. A charge for fishing in the harbour does not stop a development or industry from discharging wastes into the water body. In order for user fees to work they must be universally applied for the whole aquatic environment and the public must place a high value on the resource and be willing to pay fees with the knowledge that pollution is being abated. This assurance of abatement is in turn not without cost as it requires political will, monitoring, enforcement and public and private commitment to make it work.

7.4 Remedial Actions in Light of the Socio-economic Trends in Collingwood

The movement of Collingwood toward a recreation based economy has lead to a situation in which clean harbour water now has a higher value for the community than at any time previous. Good water quality permits a variety of recreational activities and it is a key marketing tool for attracting and implementing recreational investment. In light of Collingwood's economic transition it is in the community's best interest to ensure that harbour water quality is not a limiting factor in its march toward a new economic base.

Achieving and maintaining clean harbour water can be a two edged sword however. On one hand clean water is an attribute which attracts people to the Collingwood area . On the other hand the very fact that more people and more investment will be attracted to the Collingwood area generates more waste water and puts more pressure on the areas waste treatment systems.

Turning from recreation and tourism development it is also important to recognize that industry still plays a major role in the economic life of Collingwood. To this end caution must be exercised in the imposition of water pollution controls and regulations on industry. Controls must not be so onerous that industry's only response is to shut down and move away. On the other hand they should not give industry a " free ride" at the expense of others.

At this juncture the options for funding remedial actions in Collingwood can only be suggested. Substantial analysis will need to be done in order to prove their suitability and effectiveness. Given the rapid rise in tourism and recreation resort developments around the harbour user pay schemes seem to hold forth some promise. Special harbour improvement charges could be incorporated in lot levies to help the municipality build the necessary infrastructure and control systems. Along with regular taxes a special waterfront tax could also be levied on these developments for harbour maintenance as they benefit

more directly from a clean harbour than other types of investment. A boater charge might also be levied on residents and transients who use the marina facilities in the harbour.

Effluent charges are another mechanism that may also be appropriate for Collingwood. This system could be applied to both industries and large scale residential recreational developments. Metering systems could be put in place to monitor their use of the sewer systems. Charges could then be levied by the municipality in accordance with a predetermined rate structure. In effect this charge system almost acts like a user pay scheme as it ensures that entities pay for their use of the municipality's infrastructure in proportion to the demands they place on it.

As the results of the on-going Ministry of Environment Study on funding remedial actions become known, Collingwood will be better able to judge the mechanisms that are likely to work best in their situation. At this point all that can be concluded is that Collingwood will need to employ a variety of remedial actions to achieve and maintain the desired water quality in the harbour and at the same time they will need to employ a mixture of funding mechanisms that will generate the necessary monies for capital improvements and operational expenses. Both tasks will be challenging, but Collingwood has little choice except to meet these challenges if it is to grow and flourish as a community. An attractive, safe, usable harbour is one of Collingwood's most important "tickets" to facilitate future prosperity.

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Remedial Action Plan Plan d'Assainissement

Canada  Ontario

Canada-Ontario Agreement Respecting Great Lakes Water Quality
L'Accord Canada-Ontario relatif à la qualité de l'eau dans les Grand Lacs